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IRRIGATION DEPARTMENT, PUNJAB.

—
ADMINISTRATION REPORT -

FOR

1919-20.

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ADMINISTRATION REPORT FOR THE YEAR 1919-20.

Part I.

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Lower Jhelum Canal ...	" " 26 & 27 " "

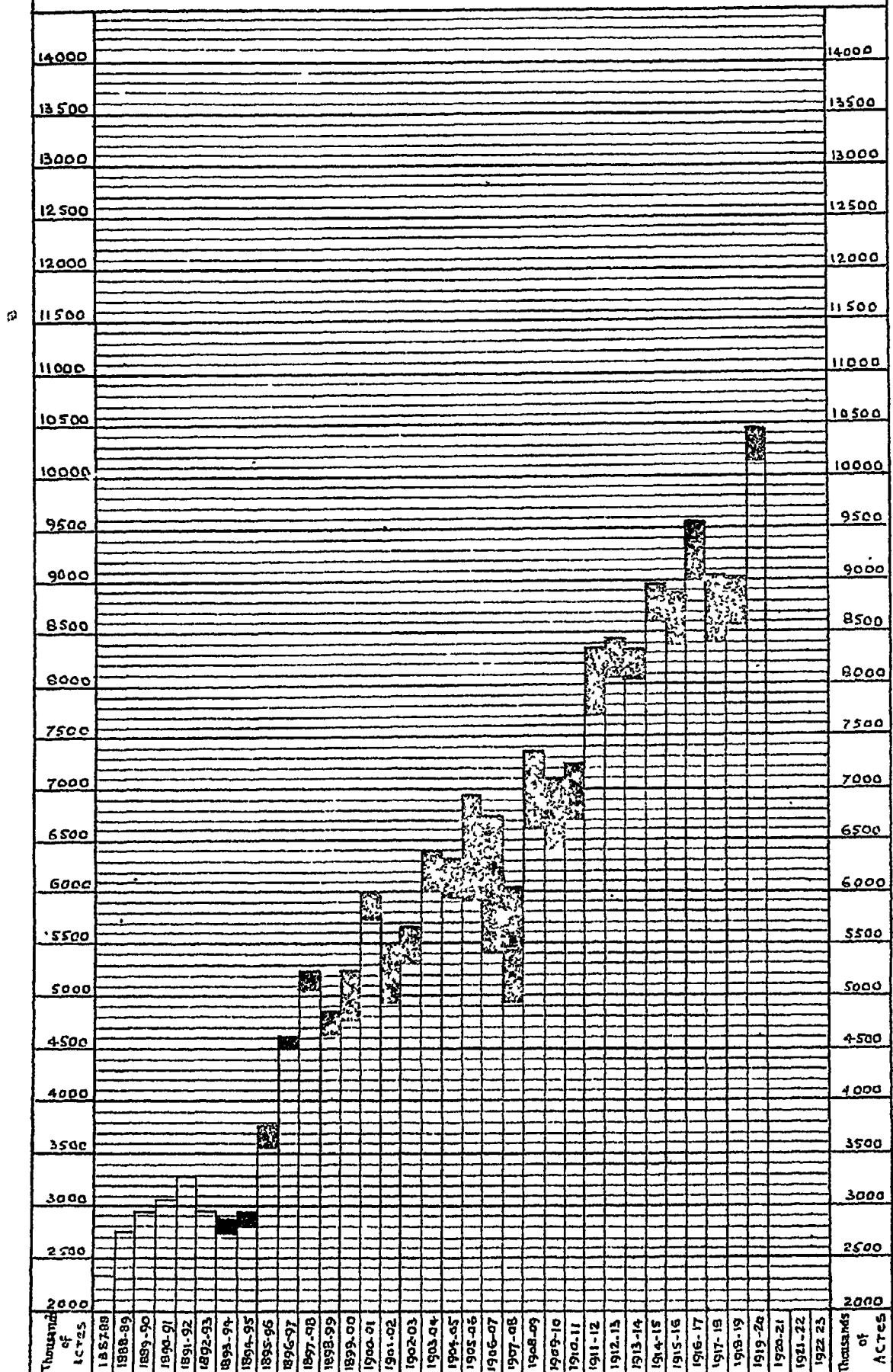
PUNJAB CANALS.

YEAR.	AREA IRRIGATED, IN ACRES (FINAL FIGURES)		
	Punjab Canals, Major Works.	Punjab Canals, Minor Works.	Total.
1887-1888	1,422,775	923,847	2,346,622
1888-1889 ...	1,753,337	1,001,027	2,757,364
1889-1890 ...	1,887,601	1,062,006	2,949,607
1890-1891 ...	2,042,689	1,016,552	3,059,241
1891-1892	2,187,487	1,104,295	3,291,782
1892-1893 ...	1,817,882	1,094,418	2,912,300
1893-1894	1,903,654	974,618	2,878,272
1894-1895 ...	1,855,858	1,075,192	2,931,050
1895-1896 ...	2,858,157	939,200	3,797,357
1896-1897 ...	3,661,517	960,110	4,621,627
1897-1898 ...	4,055,898	1,158,360	5,214,258
1898-1899	3,872,501	984,264	4,856,765
1899-1900 ...	4,381,972	859,981	5,244,953
1900-1901 ...	4,642,852	1,357,699	6,000,551
1901-1902 ...	4,491,888	981,521	5,473,359
1902-1903	4,864,274	815,690	5,679,964
1903-1904 ...	5,610,787	779,547	6,390,334
1904-1905 ...	5,689,132	617,252	6,306,384
1905-1906 ...	6,163,371	751,067	6,914,438
1906-1907 ...	5,902,995	803,317	6,706,312
1907-1908 ...	5,515,386	524,558	6,039,944
1908-1909 ...	6,385,050	968,096	7,353,146
1909-1910 ...	6,117,004	969,607	7,086,611
1910-1911 ...	6,270,757	956,285	7,227,042
1911-1912 ...	7,469,645	862,247	8,331,892
1912-1913 ...	7,461,251	968,130	8,429,381
1913-1914 ...	7,351,721	971,743	8,323,464
1914-1915 ...	7,883,628	1,079,418	8,963,041
1915-1916 ...	7,982,532	902,279	8,884,811
1916-1917 ...	8,493,867	1,085,957	9,579,824
1917-1918 ...	7,926,388	1,077,513	9,003,901
1918-1919 ...	8,348,146	667,839	9,015,984
1919-1920 ...	9,508,430	948,228	10,456,658

From 1894-95 to 1905-06 the total areas shown are *net*, thereafter the areas are *gross*.

The areas include the Swat River Canal up to 1900-01, after which date the canal was transferred to the North-West Frontier Province.

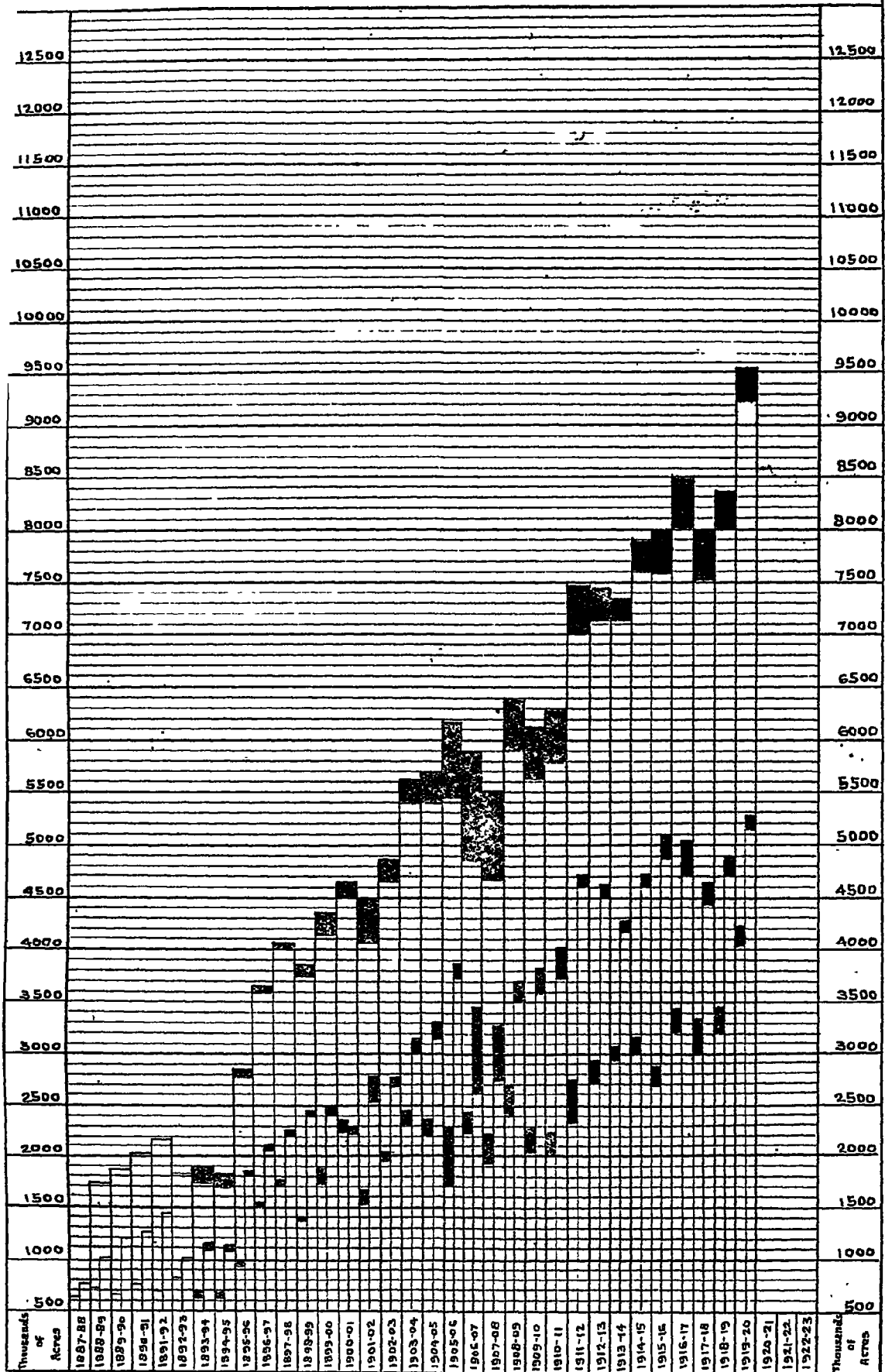
D I A G R A M SHOWING TOTAL AREA IRRIGATED BY PANJAB CANALS—MAJOR AND MINOR WORKS



The black portions represent area remitted; the yellow, net areas, from the year 1893-94

D I A G R A M

SHOWING TOTAL AREA IRRIGATED BY PUNJAB CANALS— MAJOR WORKS.



REFERENCES

The areas irrigated annually are shown by the black line columns the first sub-division of each annual column being the "Kharif" area, coloured red and the second the "Rabi" area coloured blue.

The black portions represent area remitted, the yellow, net areas, from the year 1893-94

Photo. Zinco, November, 1920.—No. 1882-385

PUNJAB CANALS, MAJOR WORKS.

YMAU.	AREA IRRIGATED, IN ACRES (FINAL FIGURES).			REMARKS.
	Kharif.	Rabi.	Total.	
1887-1888 ...	645,816	776,020	1,422,776	Lower Chenab Canal opened.
1888-1889 ...	711,612	1,041,725	1,753,337	
1889-1890 ...	672,210	1,215,382	1,887,601	
1890-1891 ...	765,417	1,277,272	2,042,689	
1891-1892 ...	706,080	1,481,448	2,187,487	Sissa Branch of Western Jumna Canal opened.
1892-1893 ...	824,236	1,521,647	1,847,882	Decrease due entirely to the favourable winter rains of 1892-93 which greatly contracted the irrigated rabi area.
1893-1894 ...	711,001	1,102,658	1,903,654	Decrease as compared with 1891-92 due to general rainfall in rabi 1893-94, and would have been greater but for new irrigation on Chenab Canal.
1894-1895 ...	708,937	1,151,928	1,855,858	Decrease due to very favourable rainfall during rabi, particularly in Sirhind and Western Jumna Canal tracts.
1895-1896 ...	991,593	1,806,564	2,858,157	Increase chiefly due to partial failure of rains of 1895 and subsequent drought.
1896-1897 ...	1,547,183	2,114,331	3,661,517	Increase due to drought.
1897-1898 ...	1,780,174	2,275,724	4,055,898	Increase due to favourable year for irrigation and extensions.
1898-1899 ...	1,418,822	2,458,670	3,872,501	Decrease in kharif due to favourable state of rivers and scanty rainfall.
1899-1900 ...	1,888,898	2,496,574	4,381,972	
1900-1901 ...	2,854,174	2,283,678	4,642,832	
1901-1902 ...	1,686,043	2,805,795	4,491,838	Lower Jhelum Canal opened.
1902-1903 ...	2,071,363	2,702,911	4,861,274	The Upper Sutlej Inundation Canals were transferred from head "Minor Works" to "Major Works" from 1st April 1902.
1903-1904 ...	2,450,780	3,160,048	5,610,797	The Indus Inundation Canals were transferred from head "Minor Works" to "Major Works" from 1st April 1903.
1904-1905 ...	2,381,786	3,307,346	5,689,132	
1905-1906 ...	2,294,460	3,834,911	6,168,371	Decrease in kharif due to cotton failure.
1906-1907 ...	2,435,219	3,107,776	5,902,095	
1907-1908 ...	2,226,291	3,289,075	5,515,386	Decrease due to abnormally low supplies in the rivers.
1908-1909 ...	2,695,518	3,689,532	6,585,050	
1909-1910 ...	2,285,870	3,831,181	6,117,004	
1910-1911 ...	2,254,333	4,016,421	6,270,757	
1911-1912 ...	2,755,324	4,714,321	7,469,645	
1912-1913 ...	2,929,309	4,531,942	7,461,251	Upper Chenab Canal opened.
1913-1914 ...	3,059,950	4,281,771	7,351,721	Lower Bari Doab Canal opened.
1914-1915 ...	3,184,751	4,098,877	7,893,028	
1915-1916 ...	3,580,578	5,095,054	7,982,582	Upper Jhelum Canal opened.
1916-1917 ...	3,441,407	5,052,400	8,493,807	Decrease in kharif due to drought and abnormally low supplies in the rivers.
1917-1918 ...	3,233,822	4,652,566	7,986,388	Decrease in rabi due to unusually low supplies in rivers and failure of winter rains.
1918-1919 ...	3,465,280	4,882,800	8,348,140	Decrease due to excessive rains in kharif and to some of the land flooded by rain in October not drying up early enough to permit of rabi irrigation.
1919-1920 ...	4,215,042	5,292,488	9,508,480	

The areas include the Swat River Canal up to 1900-1901, after which date the canal was transferred to the North-West Frontier Province.

From 1894-1895 to 1905-1906 the total areas shown are net; thereafter the areas are gross.

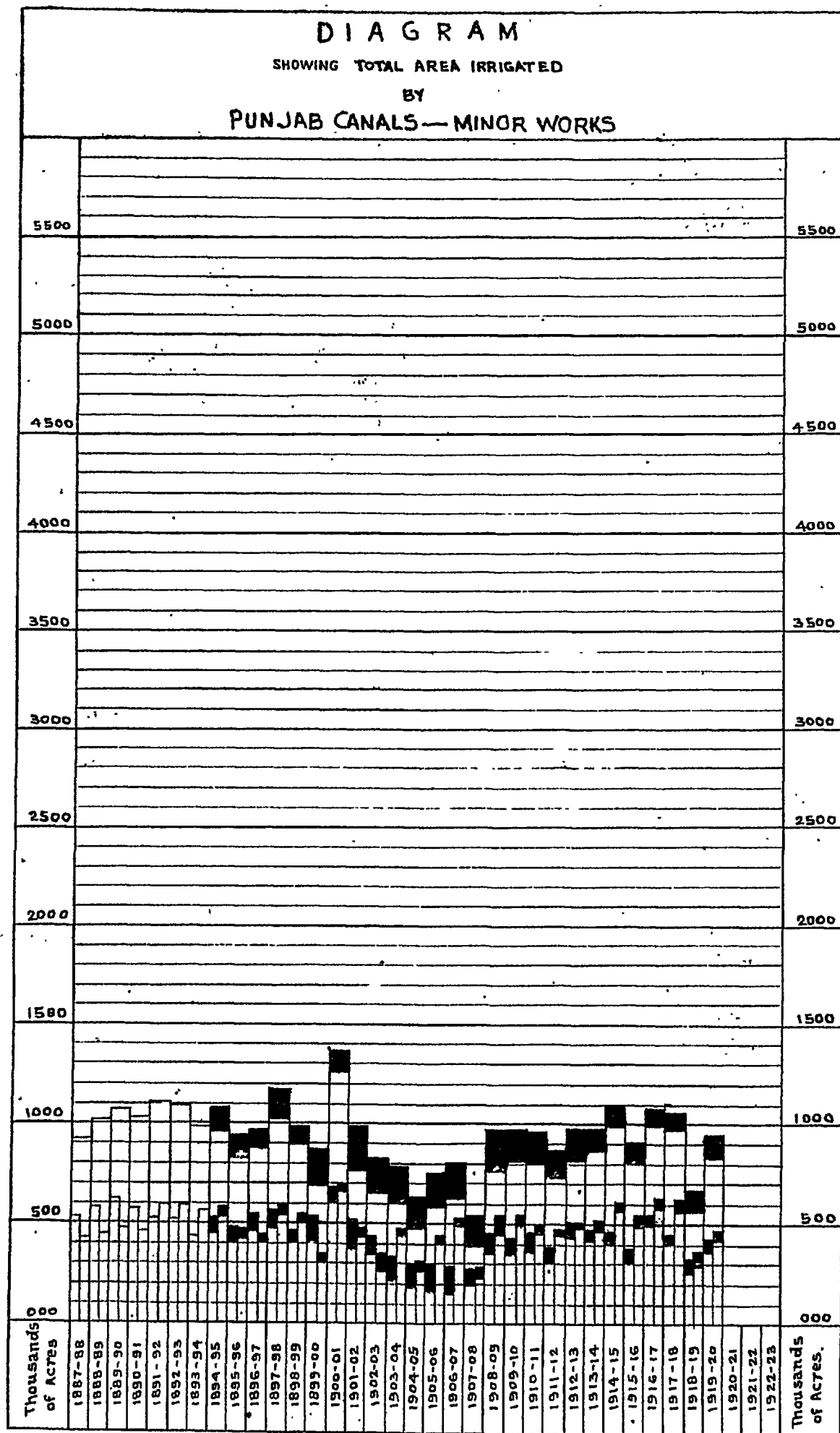
PUNJAB CANALS, MINOR WORKS.

YEAR.	AREA IRRIGATED, IN ACRES. (FINAL FIGURES.)			REMARKS.
	Kharif.	Rabi.	Total.	
1897-1898	510,016	413,831	923,847	
1898-1899	574,102	426,425	1,000,527	
1899-1890	606,625	455,381	1,062,006	
1890-1891	563,935	452,617	1,016,552	
1891-1892	510,579	593,716	1,104,295	
1892-1893	504,936	589,477	1,094,413	Rivers rose late, but subsequent supplies were good and rainfall was favourable, the result being the largest area on record up to date.
1893-1894	424,240	550,378	974,618	Decrease due to the destruction of kharif crops by high floods and to less favourable working of the canals.
1894-1895	509,825	505,367	1,015,192	
1895-1896	477,957	461,213	939,170	
1896-1897	533,745	426,305	960,050	
1897-1898	565,582	592,778	1,158,360	
1898-1899	453,402	530,863	984,264	
1899-1900	520,021	339,667	859,688	
1900-1901	669,563	688,136	1,357,699	
1901-1902	503,416	573,105	1,076,521	
1902-1903	424,819	390,871	815,690	Decrease due chiefly to the transfer of the Upper Sutlej Inundation Canals from head "Minor Works" to Major Works" from 1st April 1902.
1903-1904	316,418	469,123	785,541	Decrease due chiefly to the transfer of the Indus Inundation Canals from head "Minor Works" to "Major Works" from 1st April 1903.
1904-1905	296,636	320,616	617,252	
1905-1906	298,270	452,768	751,038	
1906-1907	295,898	507,419	803,317	
1907-1908	253,074	266,434	519,508	
1908-1909	442,083	520,008	962,091	
1909-1910	426,020	543,587	969,607	
1910-1911	459,270	497,115	956,385	
1911-1912	402,611	464,606	867,217	
1912-1913	467,957	500,173	968,130	
1913-1914	464,872	500,871	965,743	
1914-1915	466,107	613,906	1,079,013	
1915-1916	362,607	539,672	902,279	Decrease due to drought and abnormally low supplies in the rivers.
1916-1917	452,348	633,609	1,085,957	
1917-1918	463,729	613,781	1,077,510	Decrease due to excessive rainfall.
1918-1919	313,334	354,504	667,838	Decrease due to low river supplies and adverse climatic conditions
1919-1920	455,033	493,145	948,178	

The above includes the areas irrigated by the Shahpur Provincial Canals from 1890-1891 inclusive.

The above includes the areas irrigated on Ghaggar Canals, British and Bikaner State.

From the year 1894-1895 to 1905-1906 the areas shown are *net*; thereafter the areas are *gross*.



REFERENCES

The first sub-division of each annual column denotes the "Kharif" area coloured red, and the second the "Rabi" area, coloured blue.

The black portions represent area remitted; the yellow, net areas from the year 1894-95

PUNJAB CANALS, MAJOR WORKS.

(Final figures.)

Year.	Capital outlay, Direct and Indirect to end of year.	Interest charges to end of year.	Net revenue to end of year.	Accumulated profits to end of year (column 4—column 3).	For the year.			
					Gross revenue.	Working expenses.	Net revenue.	Percentage on capital.
	1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1857-1858	5,70,25,823	3,18,40,704	5,09,35,031	1,00,68,867	40,06,823	17,01,249	23,05,574	3.89
1858-1859	5,89,48,469	3,40,74,458	5,33,27,338	1,02,53,189	13,64,094	18,72,987	23,92,007	4.06
1859-1860	6,00,99,476	3,63,40,808	5,61,60,820	1,03,80,512	49,66,797	21,14,116	28,52,682	4.74
1860-1861	6,24,71,891	3,86,93,707	5,98,37,074	2,11,49,307	58,80,410	21,73,088	36,66,764	5.86
1861-1862	6,70,01,026	4,11,74,823	6,36,26,120	2,24,61,003	60,40,980	22,61,238	37,69,032	6.65
1862-1863	6,07,92,524	4,37,98,097	6,70,53,641	2,42,81,617	66,09,149	24,61,631	43,57,518	6.24
1863-1864	7,34,59,870	4,65,49,772	7,09,59,491	4,43,40,719	53,60,907	24,46,000	29,05,847	3.95
1864-1865	7,64,95,573	4,04,29,432	7,42,01,493	2,47,75,061	59,65,551	26,60,649	33,16,002	4.38
1865-1866	8,02,67,097	6,24,41,665	7,67,70,691	2,63,35,026	70,98,234	29,40,474	42,67,760	5.31
1866-1867	8,41,09,295	5,56,09,216	8,66,34,033	3,10,32,817	1,09,41,448	30,87,405	78,57,443	9.84
1867-1868	8,70,19,555	5,88,92,183	9,06,36,226	3,67,14,063	1,21,55,419	31,86,227	90,62,192	10.85
1868-1869	8,82,10,631	6,22,62,641	10,41,91,514	4,22,09,173	1,21,07,093	35,61,608	85,45,585	9.83
1869-1870	9,09,47,266	6,67,49,457	11,07,77,761	4,50,28,274	1,34,14,631	41,28,714	92,85,941	10.21
1870-1871	9,20,76,977	6,92,70,370	12,40,93,240	5,48,21,567	1,40,16,186	43,01,651	1,03,14,485	11.20
1871-1872	9,41,41,638	6,99,30,732	13,16,95,010	6,16,75,364	1,49,85,198	43,29,919	1,03,68,279	11.62
1872-1873	10,04,61,588	7,63,94,819	14,46,26,777	6,91,69,028	1,66,14,691	44,22,673	1,17,91,921	11.89
1873-1874	10,69,07,917	8,01,36,374	15,82,78,699	7,70,42,626	1,86,73,691	47,46,671	1,23,26,020	12.02
1874-1875	10,87,88,316	8,41,66,967	17,16,81,245	8,71,94,339	1,90,10,593	62,86,247	1,23,72,346	12.29
1875-1876	11,01,81,719	8,66,36,692	18,37,47,793	9,64,11,106	1,83,86,668	66,80,266	1,17,46,302	10.66
1876-1877	11,11,10,660	9,23,64,047	19,78,51,611	10,60,47,764	2,21,76,707	69,78,197	1,51,97,700	13.78
1877-1878	11,23,53,171	9,59,81,670	21,10,62,103	11,60,70,233	2,02,79,699	71,79,407	1,31,40,292	11.64
1878-1879	11,28,62,322	9,90,67,323	22,46,80,461	12,62,23,070	2,11,00,012	72,71,714	1,38,28,298	12.20
1879-1880	11,33,16,778	10,33,10,741	23,93,61,194	13,60,41,893	2,23,99,976	79,19,246	1,44,80,730	12.78
1880-1881	11,43,31,721	10,70,29,097	25,49,76,785	14,79,47,692	2,34,10,942	78,07,291	1,56,14,651	13.60
1881-1882	11,62,22,814	11,08,11,160	27,37,20,768	16,20,14,809	2,71,10,411	83,66,468	1,87,43,943	16.18
1882-1883	14,62,93,761	11,86,74,367	29,78,41,169	17,91,66,812	3,27,93,330	86,81,029	2,41,11,401	16.48
1883-1884	16,77,57,010	12,63,30,766	32,37,69,670	19,84,18,686	3,47,30,617	88,11,016	2,69,29,601	16.45
1884-1885	17,17,13,716	13,11,60,191	34,90,07,066	21,79,01,592	3,46,62,416	93,24,449	2,53,37,966	14.70
1885-1886	21,69,51,481	14,40,01,281	37,26,66,034	22,84,04,673	3,46,69,804	1,09,31,516	2,86,38,288	10.90
1886-1887	22,66,16,193	16,10,65,129	40,18,27,065	26,02,62,297	3,06,81,012	1,09,70,471	2,96,01,441	12.99
1887-1888	22,39,65,104	16,86,49,520	42,80,20,609	26,91,77,289	3,78,03,206	1,11,03,561	2,66,99,444	11.95
1888-1889	22,46,11,551	16,61,18,295	45,48,27,320	29,22,00,026	4,18,14,042	1,10,14,431	3,03,00,611	13.60
1889-1890	22,44,57,093	17,38,97,790	49,07,31,771	31,70,93,091	4,47,63,098	1,23,69,237	3,24,01,461	14.43

*Excludes the figures relating to the Great River Canal, which now belongs to the North-West Frontier Province. The figures up to 1900-1901 include the figures of that canal.

The gross revenue in column 6 is that actually collected during the year and differs from the revenue as assessed on the area irrigated in the year.

REVIEW
OF THE WORK OF THE
IRRIGATION DEPARTMENT
PUNJAB

FOR THE YEAR

1919-20.



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REVIEW
OF THE WORK OF THE
IRRIGATION DEPARTMENT, PUNJAB,
DURING THE
YEAR 1919-20.

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IN CEYLON.

Messrs. A. M. & J. Ferguson.

Government of the Punjab.
PUBLIC WORKS DEPARTMENT.

The 20th September 1920.

*Resolution of His Honour, the Lieutenant-Governor of the Punjab and
its Dependencies.*

READ—

Review of the work of the Irrigation Department, Punjab, during the financial year
1919-20.

Capital Outlay.

THE capital invested to date (direct and indirect) on Productive Major Irrigation Works amounted to Rs. 23,98,28,551 including Rs. 1,51,82,914 contributed by Native States. The expenditure, during the year, was a minus quantity as the result of various credit and debit transactions. The realizations which were effected from the sale of surplus stores and tools and plant, rendered available by the completion of all important works, and from the colonists, on account of cost of water-courses, and from other miscellaneous receipts, were greater than the expenditure actually incurred.

Capital expenditure has been incurred principally on remodelling the headworks of the Lower Jhelum and Lower Chenab Canals, works which are confidently expected to result in greatly improved control of the river from which they take off, with the concomitant advantage of reduced risk of silting in the canals.

On other canals capital expenditure was relatively small.

The minus expenditure on minor works was due to Suspense transactions on the Ghaggar Canal, the expenditure on which, to end of March 1920, amounted to Rs. 6,03,836.

Nature of seasons, etc.

2. The character of the monsoon was favourable to the extension of canal irrigation. During April and May disturbances of the cold weather type appeared frequently and gave heavier rain than usual in the South-West Punjab, though the rainfall over the plains of the rest of the Province was below normal. These conditions resulted in an unusually large area being sown without the aid of canal water. June was practically rainless, but by the end of the second week in July the monsoon began to assert itself, and before the end of that month had spread over practically the whole Province. It was very active during the whole of August, but closed on the 5th September, about 10 days earlier than usual. The absence of rain during the rest of that month, and during October and November, created an intense demand for canal water; and the greater part of the *barani* sown area was then brought under canal irrigation. Thus the *Kharif* season, as a whole, was extremely favourable to the development of canal irrigation. The area irrigated was 887,754 acres greater than that of 1915; and 840,574 acres more than the average of the previous triennium.

Owing to absence of rainfall during September, October and November, much of the available supply had to be utilized on the maturing of the *Kharif* crop, so that the *Rabi* sowings were rather later than usual, but rainfall was

considerably above the average in December, and advantage was taken of this to put down a larger area of *Rabi* crops. During January, and on to March, rainfall, though generally deficient, was timely and helpful, particularly in the dry tracts of the Hissar and Rohtak Districts. The result was that the area irrigated showed improvement over the figures of any of the past three years.

Area irrigated, etc.

3. The total culturable area commanded by Punjab Canals now amounts to nearly 19 million acres, of which over ten million acres were irrigated during the year. This is the largest area on record of irrigation per annum.

Of the total area irrigated the major works accounted for 9,478,395 acres, and the minor works 1,009,305 acres, as compared with 8,346,100 acres, and 666,279 acres, respectively, in 1918-19; and with 8,275,452 acres, and 943,256 acres, respectively, on the average of the triennium ending 1918-19. The increase in the area irrigated, while due largely to favourable climatic conditions, is also attributable partly to satisfactory development of irrigation on the triple canal system.

Financial results.

4. The gross direct receipts from the working of the Major Irrigation Works amounted to Rs. 3,23,21,625 and the working expenses to Rs. 1,16,13,793; giving a net revenue of Rs. 2,07,07,832, or 9.23 per cent. on the capital invested. The net profit, after defraying interest charges, was 5.87 per cent., as compared with 4.06 per cent. in the previous year, and 3.82 per cent. in the year 1917-18. These results are highly satisfactory.

General.

5. The total length of main and branch canals and distributaries of irrigation works of all classes, in operation to end of the year under review, was 19,664 miles, *viz.*, 4,413 miles of main and branch canals, and 15,251 miles of distributaries. No new works of any magnitude were opened for irrigation, but a few miles of new distributaries on the Lower Bari Doab Canal were completed and brought into use.

6. Owing to the growing importance of irrigation to the people, and to Government, and the steadily increased profits it secures to both, various other projects have been under the consideration of Government for the construction of new irrigation canals in the Province, a brief description of, and the present state of progress on, which has been given in the Chief Engineer's review under notice. One of them, the Sutlej Valley Project, has since been matured and submitted to the Government of India for sanction.

7. The question of the risk of water-logging in the vicinity of canals has received careful consideration during the year under review. On the Upper Chenab and Upper Jhelum Canals various measures have been taken to prevent water-logging.

By order of His Honour the Lieutenant-Governor,

F. W. WOODS,

Secretary to Government, Punjab.

Review of the work of the Irrigation Department, Punjab, during the year 1919-20.

1. This Review is based on approximate figures only, of Revenue, Expenditure, &c., which are subject to correction when the final figures are known. This procedure has been followed in accordance with the orders of the Government of India based on the example set by the Central Provinces in its Review of the working of the Irrigation Department in that Province during the year 1918-19 ; and has in view the object of making this review 'accessible to the public at the earliest possible date.

2. For purposes of accounting, Irrigation Works are classified into Major and Minor Works. The Major Works are again sub-divided into Protective and Productive Public Works ; while the sub-classification of the Minor Works consists of (1) works for which the Capital and Revenue accounts are kept, (2) works for which only Revenue accounts are kept and (3) works for which neither Capital nor Revenue accounts are kept. Capital and Revenue accounts are maintained for the more important Minor Works, but for those on which the Capital Outlay has not exceeded half a lakh of rupees, Revenue accounts only are, as a rule, maintained.

3. Protective Works are those which are not directly remunerative to the extent which would justify their inclusion in the class of Productive Works but which are constructed with a view to the protection of tracts in which rainfall is precarious in order to guard against the necessity for periodic expenditure on the relief of the population in times of famine. The cost of these works is a charge against the current revenues, and is generally met from the annual grant for Famine Relief and Insurance. There are no such works in the Punjab.

4. Productive Public Works are works of a remunerative character, undertaken either for the purposes of navigation or in the interests of general agricultural development of the country ; and both their first cost and any subsequent expenditure on extensions and improvements are met from borrowed capital. The charges for interest and for maintenance and repairs are provided for out of current revenues, to which is credited income derived from these works. Such works are expected, within 10 years after the probable date of the completion, to yield sufficient revenue to pay their working expenses and the annual interest calculated at 4 per cent. on the Capital invested.

In the Punjab the works classed as Productive Major Works are :—

- I.—The Western Jumna Canal* which irrigates the Karnal, Delhi and Rohtak Districts ; and has been carried into the dry tracts of the Sirsa Tahsil of the Rohtak District and Hissar District, and the Patiala and Jind States.
- II.—The Sirhind Canal* which waters the Ludhiana, Ferozepore and Hissar Districts and the Native States of Patiala, Nabha and Jind.
- III.—The Upper Bari Doab Canal* which irrigates the Gurdaspur, Amritsar and Lahore Districts.
- IV.—The Lower Bari Doab Canal* which irrigates the Montgomery and Multan Districts.
- V.—The Upper Chenab Canal* which irrigates portions of the Sialkot, Lyallpur, Gujranwala and Sheikhupura Districts.
- VI.—The Lower Chenab Canal* which irrigates portions of Lyallpur, Jhang, Gujranwala and Sheikhupura Districts.
- VII.—The Upper Jhelum Canal* which irrigates portions of Gujrat and Shahpur Districts.
- VIII.—The Lower Jhelum Canal* which irrigates the Shahpur and Jhang Districts.

IX.—The Upper Sutlej Inundation Canals which irrigates Montgomery and Lahore Districts.

X.—The Sidhmal Canals in the Multan District.

XI.—The Indus Inundation Canals situated in the Indus Valley.

Of these I to VIII are perennial canals ; X perennial subject to failure of supply in winter ; and IX and XI, Inundation Canals, flowing in the summer only.

5. Perennial Canals irrigate during both the *Kharif* and *Rabi* agricultural seasons, having assured supply of water all the year round.

An Inundation Canal takes off from the banks of a river with its bed at a level which is generally considerably higher than the ordinary low water surface level of the river. Water flows into those canals during the flood season but they remain in flow only until the river water surface falls below the level of their beds, which is generally two or three feet higher at the end than at the beginning of the season ; owing to silt deposits, which have to be cleared out during the period when the river is low. Supply to these canals is variable, and is assured only during the *Kharif* season, though it is generally possible to give from them, during the latter part of the *Kharif* season, a preliminary watering for *Rabi* crops, which have to be matured without further aid from canal water.

The Sidhmal Canal occupies a position intermediate between that of an inundation and of a perennial canal. It has been provided with a weir, which assures to it a supply of water, so long as there is any water in the river, but it differs from a perennial canal in that supply is insufficient, or liable to fail entirely, during the winter or *Rabi* season.

6. There are only two Minor Works, *viz.*, the Shahpur Imperial Inundation Canals and the Ghaggar Canals, for which Capital and Revenue accounts are kept. The former irrigates the Shahpur District, while the latter waters portions of the Hissar District and Bikaner State.

The Minor Works, for which only Revenue accounts are kept, are (1) the Lower Sutlej Inundation Canals, including the Hajiwah Canal, (2) the Chenab Inundation Canals and (3) the Muzaffargarh Inundation Canals. The former two sets of canals irrigate the Multan District, whereas the latter are situated in the Muzaffargarh District.

There is one other group of Provincial Canals, the Shahpur Provincial Inundation Canals, which also irrigate the Shahpur District. The cost of these is borne entirely by the Provincial Government.

Of the Minor Works, for which neither Capital nor Revenue accounts are kept, one, known as the Muzaffargarh Embankment, is Imperial, and the expenditure on it is met from current revenues ; while the following 3 canals are Provincial—

- (1) Gurgaon Bunds.
- (2) Namal Dam and Canal.
- (3) Kitchin-Irving Canal.

These Provincial Canals are controlled by the Civil Revenue authorities, under the Punjab Minor Canals Act, III of 1905.

Surveys and other preliminary investigations in connection with irrigation and drainage projects for Productive Public Works are also treated as works for which neither Capital nor Revenue accounts are kept ; the cost of these surveys, etc., being met from Provincial revenues ; but after the projects are sanctioned by competent authority, all this expenditure is charged to the sanctioned Project Estimate. Projects at present in preparation are—

- (1) Sind Sagar Doab, or Thal Canal Surveys.
- (2) Sutlej Valley Canals Project.
- (3) Drainage Scheme for Amritsar District.

7. The financial year is divided into two agricultural seasons, *viz.*, the *Kharif* or summer season and the *Rabi* or winter season. The principal crops irrigated in each of these seasons are detailed in the statement attached to this review.

8. The revenue derived from, and expenditure on, the Irrigation Works are classified as Direct and Indirect, respectively.

Direct Receipts consist of water rates based on areas irrigated on a bulk of water supplied for miscellaneous purposes, whilst Indirect Receipts comprise increase of land revenue due to, or dependent on, the Irrigation Works. The former are assessed under the Canal Act, VIII of 1873, while the latter are assessed under the Land Revenue Act.

On the older canals the indirect receipts are assessed as a fixed additional charge on "Nahri" land, called *Nahri Parla*, or a similar fluctuating water-advantage rate, representing the difference between the assessment leviable on the land in its dry and wet aspects, respectively; while on the newer "colony" canals the whole of the land revenue and malikana (*less* cesses, pre-existing revenue and increased cost of civil administration) is credited to the Canal Department. The Canal Department also receives credit for the interest at 4 per cent. on the sale-proceeds of Government waste lands, and *Nazrana* (payment made to Government in acknowledgment of a colony grant).

Direct Charges are made up of outlay on (1) Works, (2) Establishment, (3) Tools and Plant, (4) Suspense Accounts, reduced by (5) Receipts on Capital Account; whilst Indirect charges represent:—

- (a) Capitalized value of abatement of land revenue, *i.e.*, the loss of revenue or land occupied by canals and their accessories calculated at 25 times the annual amount of land revenue remitted.
- (b) Leave and Pension Allowances calculated at the rate of 14 per cent. on the gross charges for Establishment.

CAPITAL EXPENDITURE.

9. The Capital expenditure (direct and indirect) incurred during the year under review on works of all kinds, are compared with the figures of the previous 3 years in the following statement:—

Year.		49—Productive Major Works.	13—Minor Works.	Total.
		Rs.	Rs.	Rs.
1916-17	...	36,80,096	Nil.	36,80,096
1917-18	...	26,92,939	28	26,92,967
1918-19	...	12,07,566	12,247	12,19,813
1919-20	...	-82,957	-482	-83,439

The minus expenditure shown above does not mean that no works were actually constructed during the year, but this figure is the nett result of various credit and debit transactions, the former consisting of—

- (i) sale proceeds of surplus stores and Tools and Plant rendered available for sale on the completion of works.
- (ii) recoveries effected from the colonists on account of the cost of watercourses which Government constructed for them in advance in order to secure rapid development of irrigation.
- (iii) value of land rendered to original owners.
- (iv) Suspense transactions (Stock actually paid for but hitherto not used), etc.

Capital expenditure on old established Irrigation Works (Nos. I, II, III, IX, X and XI in paragraph 4 above) is not, as a rule, large, being limited to occasional important new works only. The works carried out during the year on these canals, consisted of construction of staff quarters and office buildings, and two *Kharif* distributaries for the Maler Kotla State.

On the newer canals (Nos. IV to VIII) the only works of any importance and magnitude were those carried out on the Lower Chenab and Lower Jhelum Canals. On the former the most important work, during the year under review, was the raising of the Khanki Weir, in order to secure greater control of the river and greater power of scouring silt through the sluices, thus preventing shoaling at Canal head; while smaller works included residential buildings for the revenue staff, a small new distributary, and some Minor Works of that kind. On the Lower Jhelum Canal the remodelling of the canal itself, and the channels taking out of it, was proceeded with; but progress was hampered by scarcity of labour and high rates. The major part of the expenditure, however, was incurred on remodelling the head works of the canal; which consisted principally of replacing the hinged shutters on the weir by a permanent masonry crest, providing sluice gates of the "Stoney" design in substitution for an older type of gates, and fitting standing gear and movable silt gates to the head regulator, these works being all practically completed, except the last named, part of which remains to be done during the next working season.

On the Triple Canal system Capital Expenditure was incurred on the construction of rest-houses for subordinates, telegraph offices, and boundary-road culverts over watercourses of the Upper Chenab Canal; and on buildings, watercourses and culverts of the Lower Bari Doab Canal; while on the Upper Jhelum Canal bridges, watercourses, culverts, the excavation of seepage drains to relieve water-logging, and repairs to Suketar No. II and to Jaba level crossings accounted for most of the expenditure under this head.

The minus expenditure on minor works was due to Suspense transactions on the Ghaggar Canal.

10. The total outlay to date (direct and indirect) on canals classed as Productive, or Major Works, amounted to Rs. 23,98,28,551 including Rs. 1,54,82,914 contributed by Native States. The expenditure on Minor Works was Rs. 6,03,836.

WORKING EXPENSES.

11. The working expenses for the year under review are compared below with the figures of 3 previous years :—

Year.			42—Major Works.	43—Minor Works (Imperial).	43—Minor Works (Provincial).	Total.
			Rs.	Rs.	Rs.	Rs.
1916-17	...	...	1,09,70,471	8,24,572	50,013	1,18,45,056
1917-18	...	...	1,11,03,852	8,32,297	49,478	1,19,85,627
1918-19	...	...	1,10,14,431	9,46,347	99,019	1,19,99,797
1919-20	...	...	1,16,13,793	10,07,933	47,445	1,26,69,171

In addition to the above Rs. 4,05,739 were spent on works for which neither Capital nor Revenue Accounts are kept.

The increase under all heads arises from a variety of causes, among which a general increase in cost of labour and materials and pay of Establishment may be mentioned.

NATURE OF SEASONS.

12.—*Kharif 1919*.—Light but fairly general rain fell at intervals throughout March 1919 which not only benefited the standing *Rabi* crops but also assisted the preliminary *Kharif* sowings. Some rain, accompanied, in places, by hail and high winds, was received in April 1919 and the first half of May; but did no appreciable damage to the crops. June was practically rainless, and the regular monsoon did not break until July. Rainfall was well maintained during July and August. No abnormal falls of rain or flooding of the country occurred and the monsoon closed early.

There was very little rain during September, and no rain at all in October and November; so that the demand for Canal water grew intense, with the result that large areas which had been sown as *barani* or rain crops had subsequently, in the absence of rainfall later in the season, to be matured by the help of canal water. This was more particularly the case on the Western Jumna, Sirhind and Upper Bari Doab Canals, where the increase over the figures of *Kharif* 1918 amounted to 75,264, 111,424 and 114,131 acres, respectively.

Rabi 1919-20.—The early cessation of the monsoon, and the absence of rainfall from September to November, rendered *Rabi* sowings entirely dependent on canal water; and, as much of the available supply had to be utilized by the zamindars for the maturing of their *Kharif* crops, the *Rabi* sowings were rather later than usual. Some rain fell in December, advantage of which was taken to sow a large area with *Rabi* crops. Rainfall during January and on to March, was timely and helpful, doing immense good to the crops, particularly in the dry tracts of Hissar and Rohtak Districts.

For the *Rabi* season, during the cold weather, a system of rotational turns for supply of water was, as usual, introduced on the Quintuple Canal system, consisting of the Upper Jhelum Canal, Lower Jhelum Canal, Upper Chenab Canal, Lower Chenab Canal and Lower Bari Doab Canal, from 1st October 1919, and remained in force up to 31st March 1920, when the supply of water in the rivers became sufficient to render it unnecessary. As this programme is a unique feature in the working of the five canals which are fed from the Jhelum and Chenab rivers, a short description of it seems appropriate. Prior to the completion of the Triple Canal Project (comprising the Upper Jhelum, Upper Chenab and Lower Bari Doab Canals), the Lower Jhelum Canal was able to draw off as much water as it required up to the limit of its designed capacities from the water supplies available in the Jhelum river. The supply available in the Jhelum river was more than could be utilized by the Lower Jhelum Canal, but the Lower Chenab Canal could not always in winter, even then, get its full requirements from the Chenab river. Since the cold weather of 1916, when the Upper Jhelum Canal was opened, thus bringing the Triple Canal system into full working order, the waters of these two rivers have had to be shared during the cold weather by the Upper Jhelum, Lower Jhelum, Upper Chenab, Lower Chenab and Lower Bari Doab Canals. For this purpose a programme of rotational turns for these five canals is drawn up every year by their Superintending Engineers in consultation, having regard to the nature of the season and to the supplies of water which seem likely to be available for distribution.

In drawing up this programme, the area of irrigation originally forecast for the Lower Jhelum and Lower Chenab Canals is first safeguarded by allotting to them a sufficient supply of water, and the expected balance of supply thereafter is divided rateably among all five canals, in proportion to their forecast areas of *Rabi* irrigation in the case of the Triple Project Canals, and to the excess of normal *Rabi* area over that of the original forecast in the cases of the Lower Jhelum Canal and Lower Chenab Canal.

AREA IRRIGATED, ETC.

13. The statement attached to this Review shows separately for the principal crops the area irrigated during the year. The total area irrigated by works of all kinds compares as below with the figures of the previous three years:—

	MAJOR WORKS.			MINOR WORKS.			TOTAL.		
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1916-17 ...	3,441,467	5,052,400	8,493,867	452,318	633,609	1,085,957	3,893,815	5,686,009	9,579,824
1917-18 ...	3,333,822	4,652,566	7,986,388	463,729	613,781	1,077,518	3,797,551	5,366,350	9,063,901
1918-19 ...	3,163,239	4,882,861	8,046,100	313,324	352,955	666,279	3,776,563	5,235,816	9,012,379
1919-20 ...	4,209,075	5,269,320	9,478,395	455,213	554,063	1,009,305	4,664,317	5,823,383	10,487,700

The area irrigated was the largest on record, conditions having been favourable in regard to both river supplies and rainfall, while the development of irrigation on the Triple Canal system was satisfactory. As compared with the year 1918-19 the area irrigated showed increases of 887,754 and 587,567 acres, during *Kharif* and *Rabi* respectively. It is gratifying to note that the area irrigated in the *Kharif* season shows a tendency to increase relatively to the area irrigated during the *Rabi* season; the recent great increase in the value of agricultural produce having stimulated the zamindars to take advantage of the more abundant water supplies of the *Kharif* season.

The principal crops irrigated during the *Kharif* season are as follows :—

	1919.		1918.		INCREASES OR DECREASES.	
	Major Canals	Minor Canals	Major Canals	Minor Canals	Major Canals	Minor Canals
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Sugarcane	237,198	8,008	220,379	8,861	10,819	—853
Rice	457,063	74,393	384,812	71,290	72,251	8,103
Cotton	1,519,970	116,429	1,130,222	79,618	389,748	36,810
Indigo	4,124	16,902	3,506	11,507	558	5,395
Maize	329,060	1,562	357,576	1,539	—28,516	23
Jowar and Bajra	882,368	68,428	730,404	50,793	151,964	17,635
Other crops	779,292	169,515	630,280	89,721	149,016	79,794
Total	4,209,075	455,242	3,163,239	313,334	745,840	141,948

The increase under cotton is largely attributable to the very high prices which are being obtained for it, while the special efforts of the Cotton Committee have no doubt done much to awaken the people to the importance of this crop. American cotton, which fetches higher prices in the market, is gaining in popularity. On the Lower Jhelum Canal the outturn of cotton was somewhat disappointing, owing to the appearance, during the second-half of September, of a kind of blight known as "leaf spot," which caused the leaves of the cotton bushes to turn red and fall off prematurely, seriously affecting the outturn of the second flowering.

On the Lower Chenab Canal also there were some complaints about the condition of American cotton, which, though fully developed and covered with bolls failed to open its bolls freely. This appears to have been due to the severe hygrometric conditions rather than lack of water, as the canal ran normally and the total rainfall was by no means deficient.

Towards the increase of 72,251 acres under rice on all the Major Works no less than 65,000 acres were contributed by the Upper Chenab Canal, the soil on which is well suited for the cultivation of this crop.

Regarding the increase under *Jowar* and *Bajra* and other crops it may be noted that these crops are being cultivated more extensively in order to secure protection against fodder famine.

FINANCIAL RESULTS, ETC.

14. The receipts are based not on the areas irrigated during *Kharif* 1919 and *Rabi* 1919-20, but on those of *Rabi* 1918-19 and *Kharif* 1919, water dues of which were realized during the financial year.

The gross direct receipts of the year under review compare as follows with the similar figures for the previous three years :—

YEAR.	Major Works.	Minor Works— Imperial.	Minor Works— Provincial.
	Rs.	Rs.	Rs.
1916-17	2,77,00,618	9,57,505	32,492
1917-18	2,11,24,755	9,99,212	48,501
1918-19	2,77,10,675	8,09,596	29,484
1919-20	3,23,21,625	9,09,161	35,681

Deducting the working expenses given in paragraph 11 above the nett revenue earned during the year are compared with the similar figures for the previous 3 years :—

YEAR.	Major works.	Minor Works— Imperial.	Minor Works— Provincial.
	Rs.	Rs.	Rs.
1916-17	1,67,30,147	1,32,933	—17,521
1917-18	1,00,20,903	1,66,915	—977
1918-19	1,66,96,244	—1,36,751	—9,535
1919-20	2,07,07,832	—98,772	—11,764

The nett revenue earned on direct receipts realized from the working of the Major Irrigation Works was Rs. 9·23 per cent. on the Capital cost of Rs. 22,44,28,594, while the nett profit, after defraying interest charges of Rs. 75,19,000, was 5·87 per cent. as compared with 4·06 per cent. in the previous year, and 3·82 per cent. in 1917-18.

The working of the Minor Works, on the other hand, showed a deficit. The receipts on these canals was greatly affected by the low river supplies, and unfavourable climatic conditions of the year 1918-19, which resulted in a decrease in the irrigated area during the *Rabi* season of that year on these canals.

WORKS PROJECTED.

15. In the Local Government's reviews on the Annual Administration Reports of the Irrigation Department for the previous 3-years mention has been made of the various Projects which have been under the consideration of Government for the construction of new canals or Irrigation Schemes in the Province. A brief description of these projects and the present state of progress thereon may be added here :—

(1) *The Thal Canal Project.*—The design estimates of cost of, and report on, this Project as approved by the Punjab Government were submitted to Government of India, which, however, has deferred the consideration of this Project until the fate of the Sutlej Valley Project, and its allied works, the Bhakra and Haveli Projects, is definitely decided.

(2) *The Sutlej Valley Project.*—This Project, provides for the construction of 3 weirs on the river Sutlej, below its junction with the river Beas; and a 4th weir on the Panjnad, or Chenab, below its junction with the Sutlej. Five perennial and seven non-perennial canals, with an aggregate

capacity of 48,516 cubic feet per second, will offtake from the rivers at these weirs. The Project will provide for the annual irrigation of $3\frac{1}{2}$ million acres, over and above the $1\frac{1}{2}$ million acres of precarious inundation irrigation already done in the tracts concerned, which latter area also will benefit by the more reliable supplies resulting from the construction of weirs. It will render available for colonization nearly a million acres of Crown waste land in British Territory and a further $2\frac{1}{2}$ million acres in Bahawalpur and Bikaner States. The cost of the Project is estimated at 1,420 lakhs of rupees and the financial return therefrom at 13.2 per cent. without taking any credit for sale of any Crown waste lands.

The States of Bahawalpur and Bikaner are largely concerned in this Project which has been discussed with their representatives during the year under Review.

(3) *The Bhakra Dam Project.*—This provides for the construction of a Reservoir Dam 395 feet high on the River Sutlej at Bhakra, where that river finally emerges from the Himalayas. The capacity of the Reservoir will be 120,000 million cubic feet or 2,763,000 acre feet. The project involves the enlargement of the existing Sirhind Canal and the construction of a weir on the Sutlej river below Phillaur, from which point a new canal will be constructed to take up a portion of the irrigation of the existing Sirhind Canal. A new channel will be constructed from the tail of the existing Sirhind Canal, Main Line, across to the Sirsa Branch of the Western Jumna Canal and will supply that Branch at Mundri and take up the irrigation of all the unirrigated land up to the limits of command. The supply in the Western Jumna Canal thus set free from the Sirsa Branch will be utilized for the irrigation of all the unirrigated land south-west of the Western Jumna Canal up to the limit of command and to increase the intensity in existing channels. The Project is estimated to cost about 1,450 lakhs of rupees, to give an increase of irrigated area of over 2,000,000 acres and to yield a return of 7 per cent. on the Capital Outlay. The magnitude of this Project may be judged from the fact that the Assuan Dam across the River Nile in Egypt, impounds only 36,000 million cubic feet of water. This Project is being deferred pending a final decision of the Sutlej Valley Project.

(4) *The Haveli Project* provides for the construction of a weir and canal headworks on the river Chenab, just below its confluence with the river Jhelum, from which point two canals will offtake in order to assure the irrigation of the existing inundation canals and to extend the area under irrigation. It is expected to yield a return of 6 per cent. on a Capital Outlay of 200 lakhs of rupees. But, as in the case of the Bhakra Dam Project, nothing can be done on this Project until the case of the Sutlej Valley Project is settled finally.

(5) *The Woollar Barrage Project.*—This provides for the construction of a Barrage on the river Jhelum at Sopor, just below its exit from the Woollar Lake in Kashmir; the object being to impound water in that Lake, during the summer, for use in the winter by the Punjab Canals offtaking from the Jhelum and the Chenab rivers.

The Kashmir Darbar is still considering the proposals for the execution of this Project which were submitted to it by the Punjab Government in October 1917.

GENERAL.

16. From an agricultural and irrigational point of view the year under review was a prosperous one. There were no epidemics and no calamitous failure of crops except that due to a disastrous, but fortunately localized, hail storm on 19th March 1920, which swept a straight narrow track extending from Takhtupura, between the Bhatinda and Abohar Branches of the Sirhind Canal, to Ambala, a distance of at least 80 miles. Damage was serious in 18 villages of the Ludhiana Division and 14 of the Bhatinda Division. Generous remissions of revenue were given.

17. On the Indus Inundation Canals considerable damage was done by the combined action of high rivers and floods in hill torrents during July 1919.

The Attock gauge on the river Indus rose 43 feet, and nearly all the hill torrents from Massuwah Canal to tail of Kadrā Canal were in flow, a length of about 200 miles. The Dam Sikhni Bund was breached in six places simultaneously owing to these two causes. The Manka Canal had to be cut to prevent damage to Dera Ghazi Khan town, while lower down hill torrents breached the Nur Dhundi, Kutab and Kadrā Canals.

18. The problem of preventing the evils of water-logging resulting from seepage from canals is receiving careful consideration. On the Upper Chenab and Upper Jhelum Canals drains have been, and are being, dug to carry off the water from the water-logged areas which are adjacent to the canal; and in cases where water-logging is the result of faulty design of the branch and distributary channels, causing obstruction of natural drainage lines, extensive remodelling of these channels is in contemplation. To this end, the tracts irrigated by the Nokhar and Raya Branches of the Upper Chenab Canal were resurveyed last cold weather, and on this canal the possibility of diverting some of the main drainages themselves, such as the Aik Nullah, is being investigated, with a view to ridding the canal irrigated tract of the large volumes of surface drainage water coming down those drainages during the monsoon. The installation of deep tube-wells to supplement canal irrigation in the water-logged tract round Amritsar city on the Upper Bari Doab Canal and to lower the sub-soil water level in the vicinity of the tubes has been receiving the attention of the local engineers. The existing tube wells, which are worked by hydro-electric power, do not yield a sufficient supply of water for the land in their command, and canal water has occasionally to be given to supplement the supply received from tube wells. It may become necessary to sink more and deeper tube wells for this tract.

19. The complicated zonal system on the Upper Chenab Canal, which determines the areas to be irrigated in various tracts, has been the subject of discussion at several Conferences between Irrigation and Revenue Officers, and a satisfactory decision has recently been arrived at.

20. Prices of all agricultural produce have risen considerably and the profits of agriculture are reflected in the prices paid for Government waste land at recent auction sales, at which more than a thousand rupees per acre was realized for land of average agricultural quality. This compares well with the Rs. 12-8-0 per acre, which was not very willingly paid for the best land by the early colonists in the Chenab Colony. Evidently the days when a certain amount of persuasion and advertisement were needed to colonise the land have passed away, never to return. An outturn of produce worth on the average Rs. 60 per acre would appear now to be a modest estimate, and at this rate the value of the crops for the year comes to $(10,157,601 \times 60) = 62,92,56,060$ rupees.

21. In a Province so largely dependent on canals, the above figures give a fair idea of the general prosperity of the people, and expansion of trade, etc. But the revenue derived by Government from its older canals has remained at the same rate for a long period of years, so that the existing water rates on the Punjab Canals now represent much less than the real value of the water supplied. As the Department has now to incur increased expenditure on maintenance of its works, owing to the immense rise in the price of materials and labour, it is a point for consideration whether the Irrigation Department, a *Commercial Department*, should not increase the price of its water *pari passu*, with the general rise in prices.

22. There is a considerable amount of water power available at the canal falls in the Province of which only very small part is at present used, mostly for flour mills. The proper utilization of this power has been considered by the Hydro-Electric Survey of India, and all the more important sites at which power could be generated on the Punjab Canals have been tabulated.

The utilization of canal water power is subject to the serious disability that the canals are necessarily closed periodically in the interests of irrigation, thus rendering the supply of power non-continuous, a fatal objection for a large number of purposes.

Nevertheless, two schemes for the development of canal power are in contemplation, one for pumping water for irrigation, at Renala on the Lower Bari Doab Canal, a purpose for which rotational closures are not objectionable, and the other the enterprise of a syndicate which proposes to take up, for industrial power development, several sites on the Upper Jhelum Canal and Upper Chenab Canal, the one canal being used to a great extent as a stand by for use during closures of the other, thus getting over the difficulty of non-continuous supply.

23. An important feature of the year under review was an agreement entered into between the United Provinces and Punjab Governments whereby the latter becomes responsible for the supply to the Eastern Jumna Canal of its share of water through the Head Regulator on the left bank of Jumna at Taja-wala, and controls the river above unfettered by restrictions which were necessary when United Provinces Government made their own arrangements for a supply to this canal. Under this same agreement the United Provinces Government now pay their share of cost of maintenance of the Head Works, on the actual total cost, instead of a fixed inadequate sum which had been in vogue for the past 30 years.

24. Another noticeable feature of the year was the smooth and successful working of the new simplified system of dealing with the timber traffic in the Jumna river and the head reach of the Western Jumna Canal which was sanctioned by the Local Government and brought into force during the rafting season of the previous year. Under this system the timber is made up into rafts of standard sizes and the charge is made per raft instead of on the dimension of each component piece of it. The timber depôt at Jagadhri on the North-Western Railway has developed very considerably within the last two years and the inauguration of the new and simplified system was very opportunely timed. A moderate estimate of the timber brought down is half-a-crore of rupees and the revenue derived from canal tolls thereon all but reaches one-and-a-quarter lakhs of rupees.

25. In order to enable Canal Engineers to acquire a more intimate knowledge of irrigation practice in connection with agricultural operations than they have possessed in the past, and with a view to rendering them cognizant of how, when, in what quantities, and on what crops, canal-water is used at the present day in different localities, they were directed to make observations of current practice in irrigation on selected watercourses on each canal. In accordance with these instructions a large number of observations have been made, the results of which are now being tabulated and collated in a way suitable for a permanent printed record which should prove to be of considerable value both to Irrigation Officers and to Agricultural Experts,

SIMLA :

The 14th September 1920. }

F. W. WOODS,

Chief Engineer, Irrigation Works, Punjab.

STATEMENT.

Area irrigated during the financial year 1919-20.

Name of Canal.	Civil District.	Kharif 1919.							Rabi 1919-20.					
		Sugarcane.	Rice.	Cotton.	Indigo.	Maize.	Jowar and Pajm.	Other crops.	Total.	Wheat.	Barley.	Mixed grain.	Other crops.	Total.
		Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.
MARON WORKS.	Ambala	301	1,809	142	8	136	9	137	2,562	658	213	...	1,652	2,333
	Karnal	22,443	12,381	47,705	7	734	7,693	12,705	103,668	71,871	7,318	3,368	37,129	122,716
	Hissar	3,896	2,742	55,428	...	239	25,533	22,961	110,922	29,797	13,489	21,336	41,079	105,701
	Patiala State	5,386	234	22,772	...	36	11,512	2,390	42,380	16,786	3,514	490	11,025	31,845
	Delhi	5,235	105	3,224	4	119	3,971	5,931	18,589	12,475	285	347	8,038	21,165
	Rohatak	37,135	529	51,241	208	235	13,035	10,246	116,649	66,312	3,182	2,456	42,176	113,126
	Jind State	8,691	2,198	19,279	...	22	1,083	4,188	35,461	18,748	619	180	9,004	28,641
	Bikaner State	...	...	39	...	...	22	31	92	24	15	...	23	62
	Total	83,087	20,043	202,830	227	1,511	62,858	58,612	429,203	219,671	27,695	28,177	130,236	423,779
	SIRHIND CANAL (BRITISH)	Ludhiana	1,863	1	6,040	...	14,175	9,051	1,896	33,036	23,970	3,311	...	9,721	37,033
Ferozepore		2,002	...	26,761	...	31,828	143,718	43,676	247,985	214,302	59,821	114	115,598	389,836
Hissar		...	...	100	...	3	3,387	980	4,670	752	1,257	...	515	2,554
Patiala		441	...	5,601	...	8,092	20,339	8,658	45,781	32,403	12,924	585	16,859	62,740
Nabha		339	...	3,369	...	5,338	9,863	2,223	21,132	15,657	5,196	...	8,297	29,150
Jind		16	...	159	...	178	692	266	1,301	833	486	...	329	1,618
Faridkot		827	...	5,631	...	11,690	26,496	5,537	60,301	41,635	11,127	7	21,527	74,698
Kalsia		167	...	314	...	802	862	103	2,188	1,672	354	...	1,001	3,027
Total		5,595	1	47,975	...	72,106	215,308	63,349	404,334	331,223	91,506	706	174,217	600,682

Sirhind Canal (Native States)	Patiala	...	7,728	3,139	51,679	120	2,731	85,130	5,310	158,890	138,358	50,818	13,114	53,817	234,107
	Nabha	...	1,708	530	11,125	...	5,291	8,413	2,907	30,003	17,093	2,071	1,215	11,240	31,623
	Jind	...	1,553	1,280	6,657	11	3,129	5,837	2,667	20,861	11,473	1,673	365	7,838	24,348
	Total	...	10,759	5,018	72,461	131	11,154	99,450	10,814	209,737	167,924	54,561	14,694	72,931	310,143
Upper Bari Doab Canal	Gurdaspur	...	17,977	15,088	4,329	...	5,501	4,637	2,710	50,375	15,708	1,255	8,381	11,288	39,825
	Amritsar	...	21,111	32,212	61,379	...	25,107	26,230	40,109	206,618	80,522	4,520	40,386	85,272	210,700
	Lahore	...	14,775	11,891	162,235	...	36,194	88,174	65,334	331,796	154,188	3,813	62,244	142,363	382,919
	Montgomery	...	...	...	...	...	...	...	...	...	8	3	17	83	111
Lower Bari Doab Canal	Total	...	54,163	62,191	229,073	...	67,205	119,041	108,353	639,019	250,706	9,621	111,231	242,000	613,564
	Lahore	...	25	373	1,252	...	299	419	138	2,535	1,575	105	...	727	2,407
	Montgomery	...	1,694	5,707	179,811	...	30,137	32,792	51,891	313,435	208,104	4,306	223	80,836	290,289
	Mulana	...	1,256	700	17,957	32	5,145	19,306	25,673	129,829	86,787	3,433	...	31,637	121,837
Upper Chenab Canal	Total	...	5,105	6,780	253,750	32	44,581	53,516	77,705	445,799	296,166	7,744	223	119,200	423,633
	Sialkot	...	183	30,065	411	...	...	...	1,456	32,085	3,918	583	111	3,997	7,709
	Gujranwala	...	5,096	91,271	15,819	...	...	...	24,653	139,599	65,242	3,977	66	40,421	109,608
	Sheikhpura	...	3,865	66,062	19,203	...	...	...	19,176	108,090	60,871	2,865	125	33,320	97,181
Upper Chenab Canal	Lyallpur	...	629	8,509	9,910	...	...	...	4,157	23,165	15,788	1,051	...	7,476	24,315
	Total	...	9,673	109,667	45,163	...	...	...	50,042	303,815	115,819	8,376	302	81,314	238,811

Area irrigated during the financial year 1919-20—concluded.

Name of Canal.	Civil District.	Kharif 1919.										Rabi 1919-20.				
		Sugar cane.	Rice.	Cotton.	Indigo.	Maize.	Jowar and Bajra.	Other crops.	Total.	Wheat.	Barley.	Mixed grain.	Other crops.	Total.		
Lower Chenab Canal	Gujranwala	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.		
	...	3,459	29,101	10,215	...	1,112	12,247	8,472	61,979	21,236	1,261	...	29,278	81,378		
	Sheikhpura	...	11,762	6,511	...	12,115	21,755	22,573	129,791	179,791	2,786	99	57,793	270,371		
	Lahore	...	21,725	2,765	...	77,571	106,791	91,275	322,531	670,212	13,117	6,920	388,113	1,058,412		
	Total	...	652	...	...	...	27,017	21,929	11,419	117,595	2,291	67	63,650	213,573
Upper Jhelum Canal	Gujrat	...	51,729	331,624	...	1,106	17,003	137,013	51,151	1,610,337	19,423	7,155	567,131	1,601,061		
	...	...	8,213	112,119	...	...	21,413	18,113	120,113	111,811	2,155	112	19,500	167,631
	Sheikhpura	...	13	...	...	...	571	2,113	1,113	811	10	...	223	1,100
	Total	...	8,251	112,151	...	...	25,583	20,226	111,116	112,768	2,195	112	20,086	168,731
	Lower Jhelum Canal	Sheikhpura	...	5,113	2,282	50,713	67,613	213,212	217,512	3,779	...	157,903	437,563	
Upper Sulej Irrigation Canal	Jhang	...	112	111	...	...	12,113	12,113	47,911	59,513	1,713	...	10,719	79,793
	Gujrat	...	47	61	...	...	1,322	1,579	1,113	1,112	79	...	3,367	7,568
	Total	...	5,253	2,553	...	...	62,613	61,513	241,614	229,517	11,133	...	150,931	532,901
	Lahore	...	1,276	7,729	...	...	11,011	7,113	31,117	8,213	403	6,917	7,119	22,806
	Sheikhpura	...	1,113	18,559	...	...	17,713	11,113	181,512	79,911	1,159	31,513	13,469	126,764
Total	...	2,429	26,210	...	...	28,724	18,226	193,629	24,275	1,564	38,472	20,659	149,570	

Siddhni Canal	...	Multan	...	1,025	19,798	67,104	391	1,146	13,238	31,727	139,719	88,513	2,559	...	48,872	138,374
Indus Irrigation Canals	...	Dera Ghazi Khan	...	59	61,333	39,948	3,191	...	...	61,333	166,189	50,098	...	...	22,970	73,068
	...	Total Major Works	...	237,198	457,033	1,519,970	1,121	329,000	882,368	779,392	1,209,075	3,065,607	210,422	201,702	1,561,389	5,289,320
MINOR WORKS (IMPERIAL).																
Lower Sulej Irrigation Canals	...	Multan	...	45	1,923	27,890	2,947	...	20,003	71,733	131,231	127,317	5,791	...	56,210	189,348
Chamb Irrigation Canals	...	Multan	...	1,631	12,016	32,226	2,764	1,112	12,872	28,986	91,687	61,136	1,579	...	28,271	90,986
Hajiwah Canals	...	Multan	...	2	7	2,164	7	...	2,984	8,107	13,871	19,900	200	...	7,930	28,110
Shahpur Canals (Imperial)	...	Shahpur	...	11	99	11,864	...	101	4,310	8,800	25,185	12,482	183	...	7,939	20,624
Muzaffargarh Canals	...	Muzaffargarh	...	6,191	52,537	89,815	11,184	33	18,543	31,010	139,343	110,462	8,001	10	56,534	205,007
Ghaggar Canals	...	Hissar	...	...	7,109	...	...	...	68	231	7,288	2,296	162	2,471	3,030	7,939
	...	Bikaner State	...	...	...	...	...	46	159	771	1,276	314	774	582	602	2,273
	...	Total	...	...	7,019	...	...	46	527	972	8,564	2,610	936	3,033	3,632	10,231
	...	Total Minor Works (Imperial)	...	7,930	73,631	114,079	16,902	1,292	66,139	119,908	429,881	363,967	16,690	3,063	160,586	544,306
MINOR WORKS (PROVINCIAL).																
Shahpur Canals (Provincial)	...	Shahpur	...	78	767	2,319	...	269	2,280	19,376	35,119	6,227	20	...	3,491	9,739
	...	Jhelum	...	...	...	1	...	1	9	231	242	19	...	...	...	19
	...	Total	...	78	767	2,350	...	270	2,289	19,607	35,361	6,246	20	...	3,491	9,757
	...	Grand Total Major and Minor Works	...	215,206	531,461	1,634,339	21,026	330,622	930,796	919,897	4,661,317	3,435,890	237,132	204,765	1,923,666	5,893,383

ADMINISTRATION REPORT

OF THE

CANALS IN THE PUNJAB

FOR THE YEAR

1919-20.

GENERAL.

1. THE direct receipts and expenditure of the Irrigation Department during the year were as follows :—

Direct Receipts and Expenditure.

			DIRECT EXPENDITURE.			
Major Irrigation Works.	Imperial	...	3,22,49,503	—82,140	1,14,90,720	1,14,08,580
	Contributions	...	85,818	15,414	3,66,435	3,81,843
Minor Irrigation Works.	Imperial	...	7,75,229	—483	10,07,426	10,06,943
	Contributions	...	...	445	5,933	6,378
Provincial Canals	...	...	35,681	...	47,415	47,445
GRAND TOTAL			3,31,46,231	—66,764	1,29,17,959	1,28,51,195
Average of the three years ending 1918-19.			2,52,12,187	24,15,492	1,17,17,342	1,41,32,834

* Excludes "refunds of revenue."

2. The indirect revenue credited to the canals on account of Enhanced Land Revenue, etc., amounted to Rs. 1,33,58,813. The average credit on this account of the three previous years amounts to Rs. 1,30,90,822.

Indirect Revenue.

ADMINISTRATION REPORT

OF THE

CANALS IN THE PUNJAB

FOR THE YEAR

1919-20.

GENERAL.

1. The direct receipts and expenditure of the Irrigation Department during the year were as follows :—
Direct Receipts and Expenditure.

CLASS OF WORKS.			Direct Receipts.	DIRECT EXPENDITURE.		
				Capital.	Working expenses.	Total.
			Rs.	Rs.	Rs.	Rs.
Major Irrigation Works.	Imperial	...	3,22,49,503	—82,140	1,14,90,720	1,14,08,580
	Contributions	...	85,818	15,414	3,66,435	3,81,249
Minor Irrigation Works.	Imperial	...	7,75,229	—483	10,07,426	10,06,943
	Contributions	...	...	445	5,933	6,378
Provincial Canals	...	...	85,681	...	47,415	47,415
GRAND TOTAL			3,31,46,231	—66,764	1,29,17,959	1,28,31,195
Average of the three years ending 1918-19.			2,52,12,187	24,15,492	1,17,17,842	1,41,32,834

* Excludes "refunds of revenue."

2. The indirect revenue credited to the canals on account of Enhanced Land Revenue, etc., amounted to Rs. 1,33,53,813.
The average credit on this account of the three previous years amounts to Rs. 1,30,90,822.

3. The following table shows the areas irrigated by the several canals in 1919-20 as compared with the averages of the previous triennium and with the figures of 1918-19:—

Area irrigated.				Average of the three years ending 1918-19.	1918-19.	1919-20.
NAMES OF CANALS.						
<i>Major Irrigation Works.</i>						
Western Jumna Canal ...	{	Imperial ...	...	686,024	658,895	780,757
		Patiala State ...	...	72,081	61,637	74,225
Sirhind Canal ...	{	Imperial ...	...	777,130	867,875	1,004,917
		Patiala, Nabha and Jind States	...	483,882	537,526	544,200
Upper Bari Doab Canal		...	...	1,136,955	1,065,049	1,252,583
Lower Bari Doab Canal		...	...	604,846	678,004	869,432
Upper Chenab Canal		...	...	415,759	426,864	542,656
Lower Chenab Canal		...	...	2,301,017	2,339,198	2,455,225
Upper Jhelum Canal		...	...	180,407	246,609	298,837
Lower Jhelum Canal		...	...	782,576	777,496	818,900
Upper Sutlej Canals		...	...	336,502	258,499	343,249
Sidhnai Canal		...	...	282,132	229,397	283,786
Indus Canals		...	...	216,823	181,097	239,643
Total Major Irrigation Works.				7,720,171	7,748,983	8,890,005
				555,963	559,163	618,425
<i>Minor Irrigation Works.</i>						
Shahpur Inundation Canals	{	Imperial ...	...	35,376	16,727	45,809
		Provincial ...	...	23,224	13,183	35,043
Ghaggar Inundation Canals	{	Imperial ...	...	20,541	11,472	15,247
		Bikaner State	...	7,353	1,318	3,548
Lower Sultej Inundation Canals (including Hajiwah Canal)		...	...	306,328	189,916	301,555
Chenab Inundation Canals		...	...	186,915	126,629	182,676
Muzaffargarh Inundation Canals		...	...	364,032	308,563	364,350
Total Minor Irrigation Works.				913,192	653,307	909,637
				23,224	13,183	35,043
				7,353	1,318	3,548
Total Major and Minor Irrigation Works.				8,633,368	8,402,290	9,799,642
				23,224	13,183	35,043
				563,316	600,511	621,973
GRAND TOTAL				9,219,903	9,015,984	10,456,658

4. The canals in the Punjab show the following results for 1919-20:—

I.—CANALS IN OPERATION CLASSED AS PRODUCTIVE.

Major Works.

Capital expenditure during the year	{ Direct charges	...	...	Rs. —82,140
	{ Indirect charges	...	...	27,652
		Total	...	—54,488
The capital invested to end of 1919-20 amounted to			...	22,41,57,063
Income from all sources less refunds (Rs. 72,163)			...	4,47,63,683
Working expenses less refunds (Rs. 72,163)		...	...	1,23,59,237
Balance excess revenue being 14.43 per cent. on	Rs. 22,44,57,063			3,24,01,451
Interest—			Rs.	
Total direct outlay to 31st March 1920	...	24,78,73,046		
Less half outlay during 1919-20	...	—41,070		
Mean Capital at charge	...	21,79,14,116		
Interest on total outlay to end of 31st March 1917, viz., Rs 21,41,97,441 at Rs. 3.4076 per cent. and on Rs. 37,16,675 the outlay for 1917-18 and 1918-19 and half outlay during 1919-20 at 5.9328 per cent.	...		...	75,19,495
Net profit after paying interest in 1919-20	...	...	...	2,48,84,956
Ditto ditto 1918-19	...	...	...	2,27,31,736
Ditto ditto 1917-18	...	...	...	1,92,15,030

The earnings of the Major Works are shown in line 24 of the statement at pages 4 and 5.

II.—IMPERIAL CANALS, MINOR WORKS NOT CLASSED AS PRODUCTIVE.

The capital expenditure (direct and indirect) on those canals for which Capital and Revenue Accounts are kept, *viz.*, Shahpur Imperial and Ghaggar Canals, was a credit of Rs. 520 to the accounts of the Ghaggar Canals due to some adjustments carried out during the year. The total expenditure on such canals to end of the year was, therefore, reduced to Rs. 6,03,798.

			Rs.
The income from all sources <i>less</i> refunds (Rs. 507) amounted to	...	...	16,09,922
Working expenses <i>less</i> refunds (Rs. 507)	...	...	10,67,602
<hr/>			
Balance profit in 1919-20	...	...	5,42,320
Ditto 1918-19	...	...	8,02,145
Ditto 1917-18	...	...	12,36,137
<hr/>			

The financial results of each Minor Work are shown in the body of the report.

III.—PROVINCIAL CANALS.

There is only one Provincial Canal in operation, *viz.*, the Shahpur Provincial Canal.

			Rs.
The income from all sources <i>less</i> refunds (<i>nil</i>) amounted to	...	...	45,616
Working expenses <i>less</i> refunds (<i>nil</i>)	...	...	51,327
<hr/>			
Balance profit in 1919 20	...	...	—5,711
Ditto 1918-19	...	...	2,595
Ditto 1917-18	...	...	17,179

5. The total number of dismissals and other severe punishments was 58 as compared with 95 in 1918-19 and 100 in 1917-18. Of this total 28 were dismissals, 10 after departmental enquiry, 15 for serious misconduct and 3 for inefficiency. In the previous year the corresponding figures were 26, 32 and 14, respectively.

Other forms of punishments were inflicted in 80 cases. In 15 of these the punishment was transfer of the offenders, while in the remaining 15 cases reduction in rank or pay, or both, was ordered. The corresponding figures for 1918-19 were 9 punishments by transfer and 13 by reduction in rank or pay or both.

The total of 58, as usual, does not include minor disciplinary punishments.

PARTICULARS.		Serial No.	CANALS IN OPERATION CLASSED AS PRODUCTIVE.					
			Western Jumna Canal (including Sirsa Branch).	Sirhind Canal (Imperial).	Upper Bari Doab Canal.	Lower Bari Doab Canal.	Upper Chenab Canal.	Lower Chenab Canal.
1		2	3	4	5	6	7	8
			Rs.	Rs.	R.	Rs.	Rs.	Rs.
I.—Capital (direct and indirect) outlay to end of	1918-19 ...	1	1,77,11,688	2,58,88,354	2,23,96,762	1,26,46,199	3,57,69,567	8,24,96,216
	1919-20 ...	2	1,77,85,687	2,57,64,645	2,22,76,358	2,27,56,891	3,55,49,150	3,26,81,045
II.—Income realized during the year—								
Direct, viz., water rent and miscellaneous receipts.	1918-19 ...	3	26,50,418	27,69,230	44,10,285	22,97,817	18,68,186	89,44,064
	1919-20 ...	4	83,82,525	42,35,685	47,01,044	27,68,978	23,38,818	91,41,342
Indirect, viz., land revenue due to Irrigation Works, including water-advantage rate.	1918-19 ...	5	2,18,741	98,496	6,87,189	24,86,522	1,19,149	76,80,188
	1919-20 ...	6	1,83,599	1,25,183	5,25,710	17,93,293	1,30,759	77,01,890
Total Direct and Indirect	1918-19 ...	7	28,75,154	28,67,716	51,06,123	46,93,839	19,87,935	1,66,24,247
	1919-20 ...	8	85,63,124	43,60,868	52,26,754	45,62,166	27,69,075	1,78,43,232
III.—Charges (direct and indirect) for the year—								
Maintenance, including Establishment.	1918-19 ...	9	13,41,447	11,81,868	13,22,309	11,71,904	12,80,996	23,74,078
	1919-20 ...	10	15,76,836	13,63,040	15,25,178	12,82,370	14,78,604	22,27,3.3
Interest on Capital outlay	1918-19 ...	11	5,88,141	8,51,228	7,44,278	7,68,822	12,10,623	11,04,710
	1919-20 ...	12	5,74,809	8,39,636	7,48,520	7,77,545	11,88,817	10,89,511
Total	1918-19 ...	13	19,29,591	20,33,090	20,66,582	19,40,788	24,01,810	31,79,686
	1919-20 ...	14	21,55,445	22,01,678	22,73,698	20,59,915	28,67,421	33,10,844
Profit and Loss—								
(a) Including Interest on Capital outlay.	Amount ...	15	9,45,563	8,31,620	30,89,841	27,53,053	-5,04,484	1,31,44,531
	1919-20 ...	16	14,10,679	21,53,103	29,53,050	25,02,251	1,01,654	1,35,26,388
Percentage on Capital outlay.	1918-19 ...	17	5.33	8.24	13.57	12.15	-1.41	47.44
	1919-20 ...	18	7.92	8.33	13.25	10.99	0.29	41.38
On Direct income	Amount ...	19	13,14,936	15,87,362	30,96,923	10,35,413	5,87,190	65,89,088
	1919-20 ...	20	18,95,889	28,72,645	31,75,866	14,86,503	11,59,712	69,14,009
Percentage on Capital outlay.	1918-19 ...	21	7.42	6.18	13.88	4.57	1.64	20.21
	1919-20 ...	22	10.15	11.15	14.26	6.53	3.26	21.16
On total income Direct and Indirect.	Amount ...	23	15,33,707	16,05,848	37,84,114	35,21,935	7,08,839	1,42,49,271
	1919-20 ...	24	19,89,488	29,97,828	37,01,570	32,79,796	12,90,471	1,46,15,899
Percentage on Capital outlay.	1918-19 ...	25	8.86	6.53	16.33	15.55	1.97	43.85
	1919-20 ...	26	11.17	11.63	16.61	14.41	3.68	44.72

(b) Excluding Interest on Capital outlay.

Financial results.

MAJOR WORKS.					Total Productive.	IMPERIAL CANALS, MINOR WORKS, NOT CLASSED AS PRODUCTIVE.		PROVINCIAL CANALS.	Serial No.
Upper Jhelum Canal.	Lower Jhelum Canal.	Upper Satlej (including Lower Sohag and Fara).	Sidhnai Canal.	Indus Inundation Canals.		Works for which Capital and Revenue Accounts are kept	Works for which only Revenue Accounts are kept.	Shahpur Provincial Canals.	
9	10	11	12	13	14	15	16	17	18
Rs.	Rs.	Rs.	Rs.	Rs.	R.	Rs.	Rs.	Rs.	
4,49,90,978	1,68,77,579	15,12,396	13,30,674	29,81,745	22,45,11,551	6,04,818	...	...	1
4,45,13,018	1,69,84,009	18,18,373	13,32,979	29,78,628	22,44,57,063	6,03,798	...	...	2
8,00,505	26,32,919	5,52,759	6,09,530	2,00,517	2,77,10,675	73,750	7,85,840	29,484	3
12,09,729	28,35,091	5,87,359	5,60,002	2,89,537	3,22,49,503	73,859	7,01,571	85,581	4
...	15,94,182	2,43,750	2,02,393	2,19,273	1,38,04,267	20,618	9,18,278	12,130	5
...	14,57,537	2,06,201	98,783	2,99,223	1,25,14,185	18,933	8,15,755	9,935	6
8,00,505	42,77,101	8,40,909	8,11,023	4,29,790	4,13,14,942	84,374	16,54,118	41,614	7
12,09,729	42,92,328	7,43,530	6,50,702	5,32,760	4,47,67,083	92,596	15,17,326	45,616	8
7,37,645	8,00,215	1,76,997	95,788	2,70,856	1,10,14,431	84,801	8,61,510	39,019	9
10,11,654	10,11,210	4,19,851	1,22,874	3,10,457	1,23,59,237	1,12,625	9,15,077	51,327	10
15,36,229	5,58,956	59,670	44,958	1,01,002	75,68,775	...	...	...	11
15,15,557	5,81,418	55,352	48,921	98,759	75,19,495	...	...	...	12
22,73,874	14,19,071	4,36,067	1,40,746	3,71,886	1,65,83,206	84,501	8,61,546	39,019	13
25,26,911	15,92,628	5,08,163	1,66,796	4,09,216	1,08,78,732	1,12,525	9,55,077	51,327	14
—14,78,369	29,59,030	4,64,842	0,71,177	57,902	2,27,31,736	...	...	...	15
—13,17,182	27,00,006	2,35,377	4,89,997	1,23,544	2,49,84,956	...	...	...	16
—3.27	17.18	22.33	50.43	1.14	10.12	...	...	...	17
—2.95	15.39	12.94	36.70	4.14	11.08	...	...	...	18
62,880	18,22,704	1,76,362	5,13,742	—70,369	1,66,96,244	—11,045	—1,25,006	—9,595	19
1,38,075	18,23,831	87,473	4,37,128	—70,920	1,08,00,266	—33,567	2,53,506	—15,040	20
0.14	10.93	2.73	38.61	—2.36	7.40	—1.81	...	...	21
0.44	10.74	4.81	32.79	—2.36	8.80	—6.14	...	...	22
62,800	54,16,898	4,64,512	7,16,135	1,59,904	3,63,00,511	8,578	7,92,572	2,595	23
1,93,075	32,81,418	2,93,679	5,33,918	2,22,803	3,21,04,451	—19,929	5,62,219	—5,711	24
0.14	20.49	25.63	53.82	5.33	18.50	1.58	...	...	25
0.43	19.82	10.15	40.65	7.46	14.13	—3.30	...	...	26

Major Irrigation Works. WESTERN JUMNA CANAL.

(SUPERINTENDING ENGINEER—MR. J. B. SMITH.)

1. THE Imperial expenditure (direct, indirect) amounted to Rs. 83,381. The bulk of this expenditure was incurred in connection with establishing a new Headworks Divisional charge at Dadupur, where practically all the residential buildings required for the staff were erected during the year.

A small portion of this sum was incurred on subsidiary buildings connected with a new Divisional Office required at Rohtak. The Contribution share of the expenditure was Rs. 3,751.

2. Expenditure aggregated Rs. 1,11,676 (Rs. 1,06,383 Imperial and Rs. 5,293 Contribution) and was incurred on a further extension of the important training work known as "Ohajja pitching" on the left bank of the Jumna below the Eastern Jumna Sluices, and on extending the protection down stream of the falls on the Main Branch, and remodelling distributaries by altering their masonry works so as to conform to present day working conditions.

3. These charges reached a higher level than attained in quite recent years, *viz.*, Imperial Rs. 6,22,676 and Contribution Rs. 41,616. This is due chiefly to special attention being paid to protective works at Tajawala and to improving the condition of the Main and Hansi Branches and of certain distributaries which called urgently for expenditure on their channel sections.

In addition to figures given above Rs. 18,935 and Rs. 15,947 were spent by the Patiala and Jind States, respectively, on maintenance of channels controlled exclusively by them.

4. After a summer of intense heat the monsoon broke later in the second week of July, and withdrew earlier in the first week of September.

The ample and well-distributed rainfall of the preceding January was, however, not without influence on agricultural conditions for the early *kharif*, particularly sugarcane sowings, and as a fairly good river prevailed during May and June, when demand was intense, the area of *kharif* sowings was large. The early cessation of the monsoon created a very keen demand for *kharif* last watering and preliminary watering for the *rabi* crops.

Fortunately the supply in the river was fairly good during September, October, and November. Thus not only was the *kharif* area increased, but a large area of *rabi* crops was sown. Some rain fell in December and February, and, though not as much as was required, it was quite timely and helpful, particularly in the dry tracts of Rohtak and Hissar.

The canal was in flow for 158 days during the *kharif* season and 178 in the *rabi* season. Two short closures took place in August and September and one of five days in February 1920 due to cessation of demand; another closure of a few days occurred at the end of May 1919, when the demand had been so far met as to allow of it, in order to examine the Main Branch fall and carry out some important repairs.

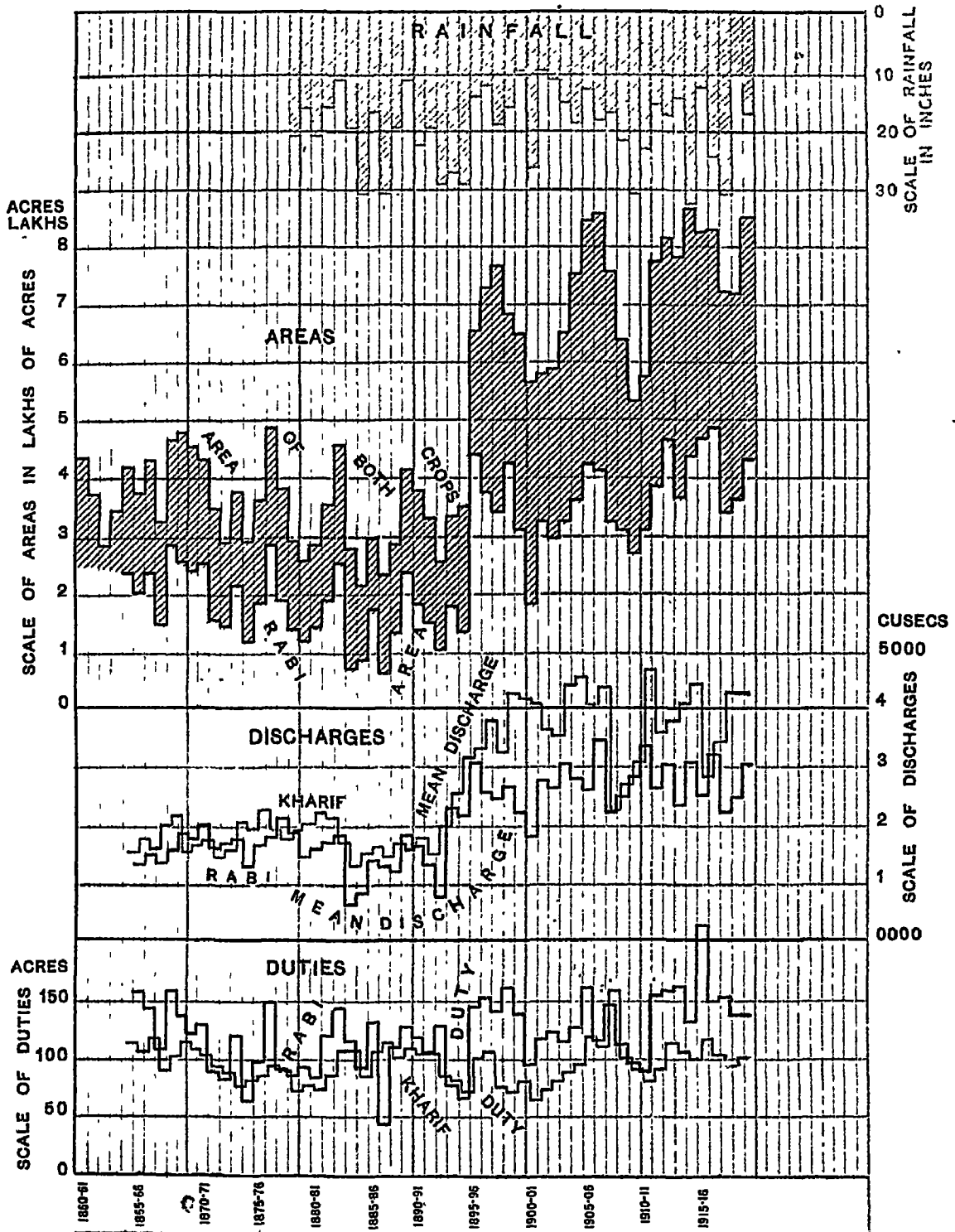
Rainfall.—The following table compares the rainfall at certain important selected sites during the year with that of 1918-19 and with the average of the years previous :—

STATION.			1919-20.	1918-19.	AVERAGE PREVIOUS TO 1918-19.
			Inches.	Inches.	Inches.
Ponla ...	...	...	62.40	39.37	58.98
Tajawala ...	...	...	46.94	36.25	53.91
Dadupur ...	...	...	33.46	29.43	42.20
Indri ...	...	...	23.11	14.26	28.05
Karnal ...	...	...	24.24	21.83	26.27
Munak ...	...	...	26.40	16.45	22.31
Delhi ...	...	...	19.25	12.37	20.49
Rohtak ...	...	...	21.94	8.89	17.43
Hissar ...	...	...	10.45	9.22	14.42

WESTERN JUMNA CANAL.

WORKING RECORD.

1919-20.



N. B.—The intercepts in the red area show the Kharif acreage each year.

The areas shown include those done in Patiala State on Sirsa, Branch.

The discharges are as measured at canal head, and are averages utilised for the whole of each crop.

The duties are derived from the above areas and discharges.

The figures show that the monsoon was slightly in defect.

Areas irrigated—

Kharif, 1919.
Rabi, 1919-20.

5. The following table compares the irrigation effected during 1919-20 with the averages of the two previous triennia, and with the figures of 1918-19 :—

Crops.	AVERAGE FOR THE THREE YEARS ENDING		AREA IRRIGATED DURING	
	1915-16.	1918-19.	1918-19.	1919 20.
	Acres.	Acres.	Acres.	Acres.
Kharif	404,117	350,729	349,172	424,436
Rabi	422,571	401,376	371,360	430,546
TOTAL	826,688	752,105	720,532	854,982

The results for the year compare favourably with the previous figures tabulated, though it should be remembered that the lesser areas of the two preceding years were due to adverse irrigational conditions ; in 1917-18 rainfall considerably in excess of the normal and in 1918-19 the influenza epidemic.

6. The receipts amounted to Rs. 1,24,904. This constitutes a new record, being about Rs. 34,000 in excess of the previous one, which was attained in 1902-03.

This satisfactory increase is mainly due to the sudden expansion of the timber traffic to Jagadhri, consisting entirely of sleepers and building timber brought down in rafts, a conservative estimate of the value of which for the year under review is not far short of half-a-crore of rupees.

With the exception of a few Government barges carrying materials and a solitary barge belonging to a mill contractor transporting grain and flour no boats are to be seen now on this old navigable canal.

7. *Imperial*.—The gross revenue was Rs. 35,06,124, while the working expenses amounted to Rs. 15,76,036, giving a net revenue of Rs. 19,89,488 as compared with Rs. 15,33,707 of the previous year and Rs. 17,57,716 the average of the previous triennium. The increase of Rs. 2,31,772 was due to the increase in the area irrigated in both the crops, the assessment of which was collected during the year.

The net revenue represents a return of 11.17 per cent. on the capital cost of the canal.

Contribution.—The net revenue received by the Patiala State on their channels on the Sirsa Branch amounted to Rs. 1,89,582 or 16.28 per cent. on the capital invested as compared with an average of Rs. 1,67,858 or 14.46 per cent. for the triennium ending 1918-19 and Rs. 1,97,075, or 16.93 per cent. of the previous year.

8 (a). *Agricultural conditions*.—These were generally not unfavourable either to the cultivator or to the Government. It is true that the monsoon was in defect on the whole, but, thanks to the plentiful and well-distributed rainfall of July and August, millets and maize were plentiful and fodder ample. Cattle were consequently in good condition. Health, too, was normal, and the people were able to make good use of the early *rabi* supplies, which were better than usual.

There was a total absence of blight and insect pests and remissions for failed canal irrigated crops were remarkably low both in the *kharif* and *rabi* seasons.

Prices, too, ruled in favour of the cultivator and brought him good return for his labour. Sugarcane, always an important crop on this canal,

maintained its position, the acreage being only a couple of thousands of acres short of the maximum, while the estimated yield of the crop was valued at no less than 185 lakhs of rupees, or rather more than the capital invested in the Canal.

Cotton too, though almost wholly of the "dasi" varieties, and wheat each repaid the country in like manner.

(b) *Projected works.*—In connection with the project for remodelling the Headworks at Tajawala an alternative has been under consideration which will remove the difficulties caused by loose timber brought down by freshets in the river and also reduce the entry of shingle into the Canal. A further preliminary investigation of possible storage sites on the Jumna awaits permission from State authorities to proceed.

(c) *Miscellaneous.*—(i) At the commencement of the year an important agreement was entered into between the United Provinces and Punjab Governments whereby the latter has undertaken to give the Eastern Jumna Canal its share of water through the Head Regulator on the left bank of the Jumna at Tajawala, and controls the river above unfettered by restrictions which were necessary when the United Provinces Government made their own arrangements for a supply to this Canal.

(ii) As will have been noticed from paragraph 6 navigation on this Canal, except for the important and valuable rafting traffic in the first 26 miles of its length, is a thing of the past, though its possibilities as a means of communication are to be closely examined shortly, and it may revive.

The new system of assessing toll on the timber traffic above alluded to worked very smoothly and expeditiously despite the enormous expansion of the trade, and its inauguration, the previous year, was very opportunely timed.

Labour was scarce throughout the year, the influenza epidemic during October and November 1918 and recruiting for the Army having further depleted the formerly shrinking supply. This combined with higher prices generally has made it more expensive; rates of work have risen in consequence, and there seems no immediate prospect of any reduction. Establishment charges, too, have increased and a further increase is foreshadowed for the small salaried officials who, be it said to their credit, have worked exceedingly loyally under adverse conditions. Coal is more difficult to obtain than ever and in consequence brick manufacture, at anything like former rates, is quite impossible.

The increase in rates all round points to the urgent necessity for enhancing the water rates if former financial returns are to be maintained. The average estimated value of crops matured by the Canals, including those in the Native States, is no less than Rs. 89 per acre, and the zamindar has enjoyed the protection of the canal for the very modest charge of Rs. 4.4 per acre. It is true that the working expenses, reduced to the same base, are only 2.02 per acre, but as has been pointed out, and unless prices fall appreciably, this cost must increase if the canals are to be efficiently maintained. So it is not unreasonable that the zamindar should be required to pay a trifle more for the protection and service he enjoys.

9. *Irrigation in Native States.*—The irrigation done in the Patiala and Jind States from the Sirsa and Hansi Branches respectively, compared with that of the two preceding triennia, are given in the statement below :—

PATIALA STATE.

CROP,	AREA IRRIGATED DURING 1919-20.	AVERAGE FOR THREE YEARS ENDING	
		1915-16.	1918-19.
Kharif ...	42,380	36,053	36,680
Rabi ...	31,845	31,126	25,401
TOTAL ...	74,225*	67,179	72,081

* Includes 79 acres re-let in Kharif and 20 acres in Rabi.

JIND STATE.

IRRIGATION DURING 1919-20.	AVERAGE FOR THREE YEARS ENDING	
	1915-16.	1918-19.
60,884	61,040	60,116

BIKANER STATE.

The area irrigated was only 154 acres against the 460 supposed to be done annually. This shortage is due to defects in distribution of supply which is receiving attention and improved results are hoped for.

KALSIA STATE.

The irrigation in Ka'sia State from the Main Line of the Canal was 914 acres in *kharif* and 1,031 acres in *rabi* or a total of 1,945 acres exclusive of 30 acres remitted in *kharif* and 32 acres remitted in *rabi*. The average area assessed for the last three years has been 901 acres in *kharif* and 928 in *rabi* or a total of 1,829 acres.

The irrigated areas in the two last-mentioned States are subject to the occupiers' rates current on the Canal and are assessed by this Department.

SIRHIND CANAL.

(SUPERINTENDING ENGINEER—MR. E. R. FOY.)

1. (a) *Imperial*.—The expenditure (direct and indirect) amounted to Rs. 75,791, bringing the total outlay to date to Rs. 2,57,64,645. The year's expenditure was incurred on making two new *kharif* distributaries for Maler Kotla State; a new rest-house, outbuildings and dispensary at Dadahur; Staff quarters at Asabutar and re-building out-buildings at Rupar.

(b) *Contribution*.—The expenditure of Rs. 11,663 represents the share borne by the Signatory States of the expenditure incurred on the Headworks and Main Line and also that incurred by the Patiala Division.

2. (a) *Imperial*.—The expenditure incurred amounted to Rs. 91,555 against Rs. 81,150 in the previous year. The most important work carried out was the erection of gauge wells on the Sutlej at Burj Hassan and Gorsian in order to continue observations of the river levels and supplies required in connection with the Sutlej Dam Scheme (Bhakra Project). The usual other petty works of raising and widening distributary bridges, changes of outlets, and adding filters to drinking water reservoirs were also carried out.

(b) *Contribution*.—Of Rs. 57,913 spent Rs. 40,336 represented seigniorage charges and Rs. 7,305 the share of expenditure on the Headworks and Main Line. The balance of Rs. 10,272 was spent in the Patiala Division on petty improvements to rest house, menials' quarters, and mills.

3. (a) *Imperial*.—Expenditure was Rs. 4,26,739 against Rs. 4,41,820 in the preceding year. It was incurred on the ordinary maintenance of canals. None of the works call for particular mention.

(b) *Contribution*.—Rs. 1,26,850 against Rs. 1,30,998 in the previous year were spent on the ordinary maintenance expenses of the Native States Branches plus the share of expenditure on the Headworks and Main Line.

4. June was practically rainless and the regular monsoon did not break till July, but was well maintained during July and August. No abnormal falls or flooding of the country occurred. In the submontane tract near Rupar showers were frequent but small, with the result that there was no thorough soaking of the soil. In fact, total rainfall at Rupar for the monsoon was the lowest on record. The monsoon closed early. The rainfall of September was slight, while October and November were rainless. Light and fairly general rainfall in December was timely and helpful.

Nature of seasons and state of demand
and supply—

Kharif, 1919,
Rabi, 1919-20.

The demand, owing to phenomenally heavy and early sowings of *kharij* crops, was very keen throughout the year. The early stoppage of the monsoon and demand for water for maturing *kharij* and sowing *rabi* further accentuated it. Supply was sufficient or ample throughout the *kharij*, but as usual there were rotational turns in the Branches in the *rabi* season.

The canal was closed for 21 days in *kharij* only.

Rainfall.—The following table compares the mean rainfall of the year by seasons and districts over the irrigated tract with the average mean of 36 years :—

DISTRICT.	Crops.	RAINFALL.		Percentage of actual to average of 36 years.
		1919-20.	Average of 36 years.	
Ludhiana ...	<i>Kharij</i> , 1919 ...	13.81	16.22	
	<i>Rabi</i> , 1919-20 ...	3.97	3.97	
	TOTAL ...	17.78	20.19	88 %
Ferozepore ...	<i>Kharij</i> , 1919 ...	12.67	11.86	
	<i>Rabi</i> , 1919-20 ...	1.99	2.28	
	TOTAL ...	14.66	14.14	105 %
Native States ...	<i>Kharij</i> , 1919 ...	13.60	15.40	
	<i>Rabi</i> , 1919-20 ...	3.29	3.19	
	TOTAL ...	16.89	18.65	91 %

Area irrigated—

Kharij, 1919.
Rabi, 1919-20.

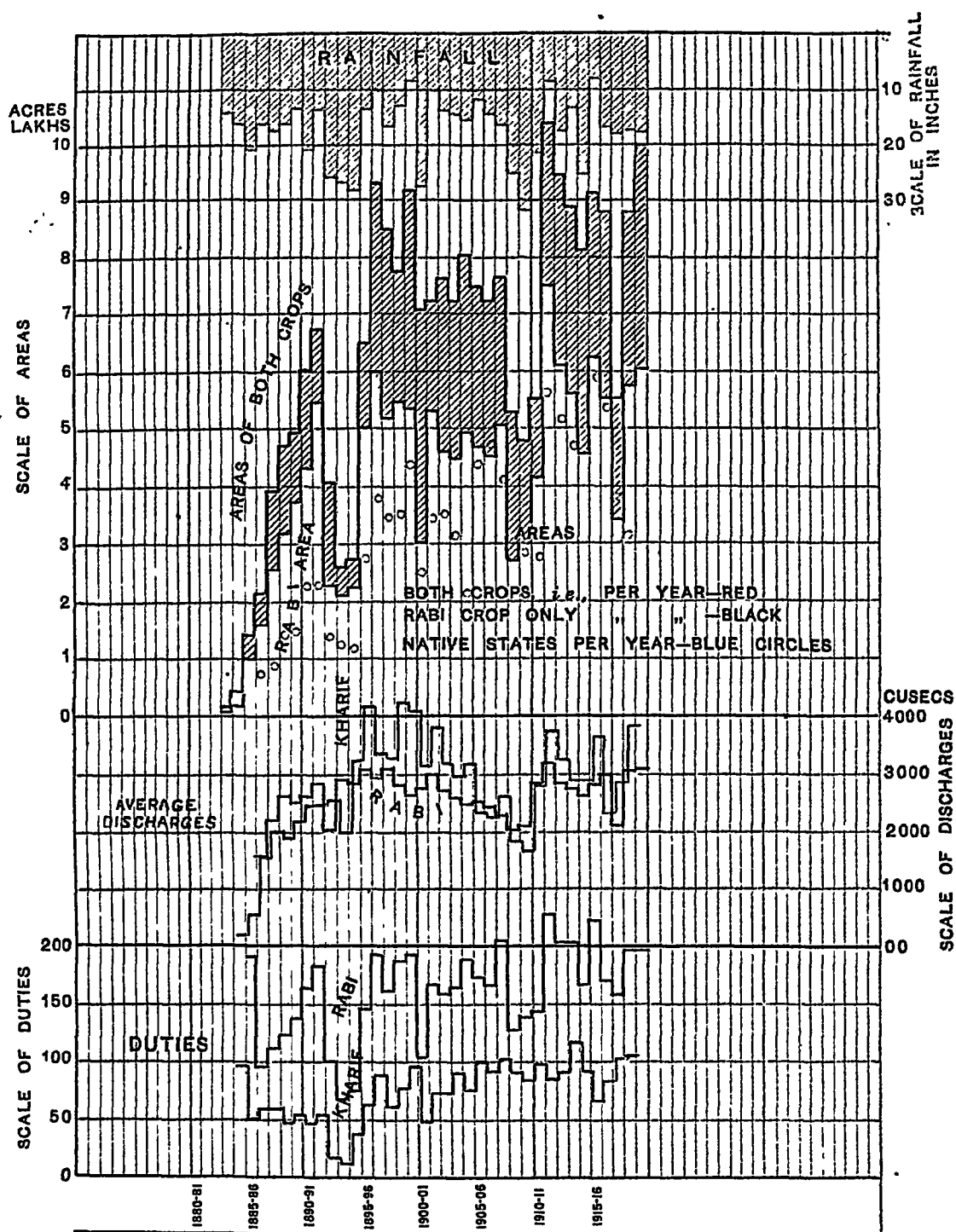
5. The following table compares the irrigation in each crop with the average of the two previous triennia and the figures of 1918-19 :—

CROP.	AVERAGE OF THREE YEARS ENDING		AREA IRRIGATED DURING	
	1915-16.	1918-19.	1918-19.	1919-20..
	Acres.	Acres.	Acres.	Acres.
BRITISH BRANCHES.				
<i>Kharij</i> ...	321,756	282,512	306,510	403,647
<i>Rabi</i> ...	557,634	494,618	581,365	601,270
TOTAL ...	879,390	777,130	887,875	1,004,917
NATIVE STATES' BRANCHES.				
<i>Kharij</i> ...	194,459	199,487	218,910	233,197
<i>Rabi</i> ...	308,743	284,395	318,616	311,003
TOTAL ...	503,202	483,882	537,526	544,200
BRITISH AND NATIVE STATES' BRANCHES.				
<i>Kharij</i> ...	516,215	481,999	525,420	636,844
<i>Rabi</i> ...	866,377	779,019	890,961	912,273
TOTAL ...	1,382,592	1,261,012	1,425,401	1,549,117

SIRHIND CANAL—BRITISH.

WORKING RECORD.

1919-20



N. B.—The intercepts in the red area give the Kharif acreage each year.

The small areas of 1892 to 1896 were partly due to silt difficulties, but chiefly to heavy rain. The working is more or less unsteady always.

The discharges are measured in main line 26 miles from the head. Of the whole supply 36 $\frac{3}{4}$ % goes to Native States, not included here; so that the discharges here shown are only 64% of the actual flow.

These States ought therefore to do areas equal to $\frac{3}{4}$ ths of those shown above. The actual areas done for both crops are shown for comparison by blue circle, and it will be seen that owing to less efficient management they have done less than half the British, instead of $\frac{3}{4}$ ths. In winter the whole river is taken in; in Kharif the supply is more than enough, but the demand is then always low.

SIRHIND CANAL—BRITISH.

FINANCIAL RECORD.

1919-20



N. B.—The intercepts in the red area show arrears of interest which, added to the capital, give the sum at charge. Where the two red curves cross all such arrears were wiped off, and there after accumulated profits accrue, as measured by the intercepts in the blue area.

The scheme was begun about 1870 and opened in 1883-84. The lapse from prosperity shown in period 1883 to 1896 was partly due to silt troubles since overcome, and to exceptionally heavy rain.

The intercepts between the black curves give the net revenue.

No interest is charged on the arrears of interest, so the sum at charge is somewhat untrue.

British Branches.—The *kharif* area was the largest on record, while the *rabi* area was the fifth highest. Both combined give an area 1,004,917, which was only exceeded once in 1911-12, when 1,052,581 acres were irrigated. But for good and timely rain in the spring even the latter figure would probably have been exceeded.

Native States' Branches.—Here, too, the *kharif* area was the best on record, but the *rabi* was not so good. The total of both crops was good but has been exceeded twice in the years 1911-12 and 1915-16, the figures being 556,876 acres and 580,008 acres, respectively.

For the whole canal the total area irrigated was 1,549,117, which has only been exceeded once in 1911-12, when the irrigation was 1,609,458 acres.

Navigation.

3. The details of traffic in tonnage and receipts are shown in the following table :—

PARTICULARS.				1918-19.	1919-20.
Tonnage carried	...	...	...	34,299	51,091
Value of tonnage	...	...	...	1,345,984	2,081,234
Toll receipts and raft dues	...	...	...	17,892	28,038
Maintenance charges	...	...	...	3,909	6,289
Number of passengers carried	...	...	...	30,198	25,050

From the above the increase in gross receipts over the previous year was 10,141, due to very heavy sleeper traffic which was better and more expeditiously handled by the Forest Department than previously.

7. (a) *British Branches.*—The net revenue from all sources after deducting working expenses amounted to Rs. 29,97,828, giving a return of 11.63 per cent. on the capital cost against 6.56 per cent. in the preceding year. The latter was, however, vitiated by the poor irrigation in the *rabi* of 1917-18 the water rates for which were collected in 1918-19 and by the Native States failing to collect Rs. 1,52,022 in that year.

This year again the Native States had failed to collect Rs. 2,10,927, and if that amount had been realized and paid into British Treasuries the return for the year would have been still better.

The following table gives the amount of occupiers' rates collected with balance outstanding at end of the year :—

YEAR.				Collected.	Balance uncollected.
1917-18	...	...	...	30,51,721	38,549
1918-19	...	...	...	24,75,310	1,52,022
1919-20	...	...	...	30,40,803	2,10,927

(b) *Native States' Branches.*—The following table compares the figures of the present and previous years in collections, assessments, areas assessed, and profits :—

YEAR.	AMOUNT OF REVENUE		Area assessed.	PROFIT ON	
	By collection.	By assessment.		Collection.	Assessment.
	Rs.	Rs.		Rs.	Rs.
1918-19	10,76,107	24,97,552	530,338	8.38	12.02
1919-20	25,36,518	25,00,934	543,955	12.90	12.07
More or less . . .	+ 5,60,411	+ 63,382	+ 7,617	+ 4.17	+ 0.47

The States have, therefore, also had a prosperous year.

8. *Areas of Principal Crops—Sugarcane.*—Area assessed was 5,409 acres against 6,479 acres in the previous year.

General Remarks,

Cotton.—Area assessed was 120,207 acres against 72,026 acres in the previous year. This included 14,787 acres of American cotton.

Wheat.—Area assessed was 318,283 acres against 261,883 acres in the previous year.

The Agricultural Conditions were favourable for canal irrigation, and the year was a prosperous one. There were no epidemics and no widespread calamities or failures of crops except that due to a disastrous hailstorm on 19th March 1920, which took a straight narrow tract extending from Takhtupura between the Bhatinda and Abchar Branches to Amballa, a distance of at least 80 miles. Damage was serious in 18 villages of the Ludhiana Division and 14 of the Bhatinda Division. Generous remissions of revenue were given.

Discharge Observations.—The gauge and discharge stations at Bhakra on the Sutlej and Pang on the Beas are kept up and very useful information is obtained from them. Weekly discharges of the Beas near Beas Bridge are taken by the Upper Bari Doab Circle and intimated to this Circle, and the information is extremely important and useful.

UPPER BARI DOAB CANAL.

(SUPERINTENDING ENGINEER—RAI BAHADUR LALA WAZIR CHAND CHOPRA, B.A.) .

1. The expenditure (direct and indirect) on works excluding suspense amounted to Rs. 17,370 against Rs. 10,016 in the previous year, and was incurred on constructing quarters for signallers, peons and guards at Amritsar and out-houses of a small rest-house at Madhopur.

Capital Account—

Kharif, 1919, — — —
Rabi, 1919-20. . .

The suspense account showed a credit balance of Rs. 1,37,774 as compared with a debit balance of Rs. 5,53,833 in the previous year.

2. Expenditure amounted to Rs. 47,938 against Rs. 90,768 in the previous year and was incurred chiefly on lowering the crest of the Lower Training Works; remodelling and extending the Majitha-Hudiara Drain; constructing Pindori-Gumtala Drain and a cart bridge across the Gilpan distributary; improving quarters for menial canal establishment at Amritsar, and setting back and widening the banks of Kasur Branch Upper.

Extensions and Improvements

3. Expenditure amounted to Rs. 6,50,113 against Rs. 4,92,824 in 1918-19, and Rs. 4,82,999 the average of last three years. The excess was due to the fact that Maintenance and Repairs, enforced economy during the period of war (1914-1919) resulted in many important works of special repairs being postponed; and these were taken up during the financial year under report.

In addition to the cost of ordinary annual maintenance expenditure was incurred on special repairs to river works, canal head works, canal feeders, pitching of slopes, and widening patrol roads, etc.

4. The total value of manufactures amounted to Rs. 4,66,370 against Rs. 6,25,006 in the previous year. The decrease was mainly due to the fact that demand for manufactured goods had been less than it was in the previous year. The Central Workshops.

The percentage charges realized on the value of work done amounted to Rs. 1,20,469 against Rs. 1,69,945 of the previous year.

The profit resulting on the outturn works out to about Rs. 20,544.

The important works undertaken were the completion of the regulator gates and machinery and the group of undersluice gates at the Rasul Head Works of the Lower Jhelum Canal, some work in connection with Khanki shutters, and making steel well curbs for the Chenab Road Bridge near Wazirabad.

A quantity of work was also done for the Military Works Department, totalling to over half-a-lakh of rupees, chiefly in respect of special *punkha*-pulling mechanism designed at the central workshops.

A good number of Ashford's patent tube wells were also supplied to the North-Western Railway and to various other Railways, the Military Department, and the Buildings and Roads Branch of the Public Works Department, Punjab.

The local political atmosphere was rather electric during the year, and this reflected in the shops also to a certain extent. The serious disturbance in Amritsar during April necessitated closing the works entirely for a week and disorganized work for the greater part of the month.

The strike epidemic which has swept over the world has had the effect of creating an unsettled spirit. Every effort was made to find remedies for every cause of discontent and the troubled year was negotiated without any breach of the relations between the management and the men.

5. The following table compares the area irrigated during the year with average of the two previous triennia and of the figures of 1918-19 :—

Crop.	AVERAGE OF THREE YEARS ENDING		AREA IRRIGATED DURING	
	1916-17.	1918-19.	1918-19.	1919-20.
	Acres.	Acres.	Acres.	Acres.
Kharif ...	529,088	549,088	524,888	639,019
Rabi ...	628,770	586,067	540,161	613,564
TOTAL ...	1,158,453	1,136,955	1,065,049	1,252,583

The remarkable feature for the year 1919-20 was that not only the *kharif* irrigation was the largest on record, but the total area irrigated, *viz.*, 1,252,583 acres also beats the record of past 31 years.

6. The mean rainfall by districts is compared with the average of the previous three years in the following table :—

Nature of seasons and state of Demand
and Supply—
Kharif, 1919.
Rabi, 1919-20.

DISTRICTS.	1910-20.		AVERAGE OF PREVIOUS THREE YEARS ENDING 1918-19.	
	Kharif.	Rabi.	Kharif.	Rabi.
	Inches.	Inches.	Inches.	Inches.
Gurdaspur	20.06	5.55	28.00	0.61
Amritsar	16.02	4.28	21.00	4.75
Lahore	15.53	2.42	20.23	2.70

The monsoon was both timely and well distributed. It commenced in July and was normal in intensity. From April to September inclusive the rainfall recorded at Madhopur was 61.91 inches as against 26.79 inches recorded for the same period in 191-19 and an average of 40 inches of the last 15 years. The monsoon came to an end early in September, rather earlier than usual. This was favourable for increasing the area under canal irrigation as a good deal of the area that was sown on rains earlier in the season received canal water in September. The *kharif* area has, therefore, surpassed all records. October was almost rainless and November had only a passing shower, but there was good rainfall in December to March which helped both irrigated and unirrigated crops. The *rabi* was, therefore, normal.

The maximum flood reading gauge of the River Ravi at Mukesar was 22.4 feet on 13th July 1919 as against 12.4 feet last year.

7. The income (direct and indirect) amounted to Rs. 37,01,576 equivalent to 14.61 per cent. on the capital invested compared with 16.89 per cent. of the previous year. The decrease was due to a larger expenditure under working expenses which amounted to Rs. 15,25,178 as against 13,22,309 incurred in the previous year.

Financial results based on collections—
Rabi, 1918-19
Kharif, 1919.

The uncollected balance of occupiers' rates was Rs. 17,169 against Rs 43,256 at the end of the previous year.

Remissions of water rate amounted to Rs. 27,455 compared with Rs 41,237 of last year.

The area for which remission was granted was 6,741 acres as compared with 20,531 acres in 1918-19.

8. (a) *Duty*.—The average duty secured on the supply utilized was 122 acres in *kharif* and 214 acres in *rabi* as against 96 acres and 205 acres, respectively, of the previous year.

General remarks.

The canal was closed from the 1st to the 15th January for annual repairs, etc.

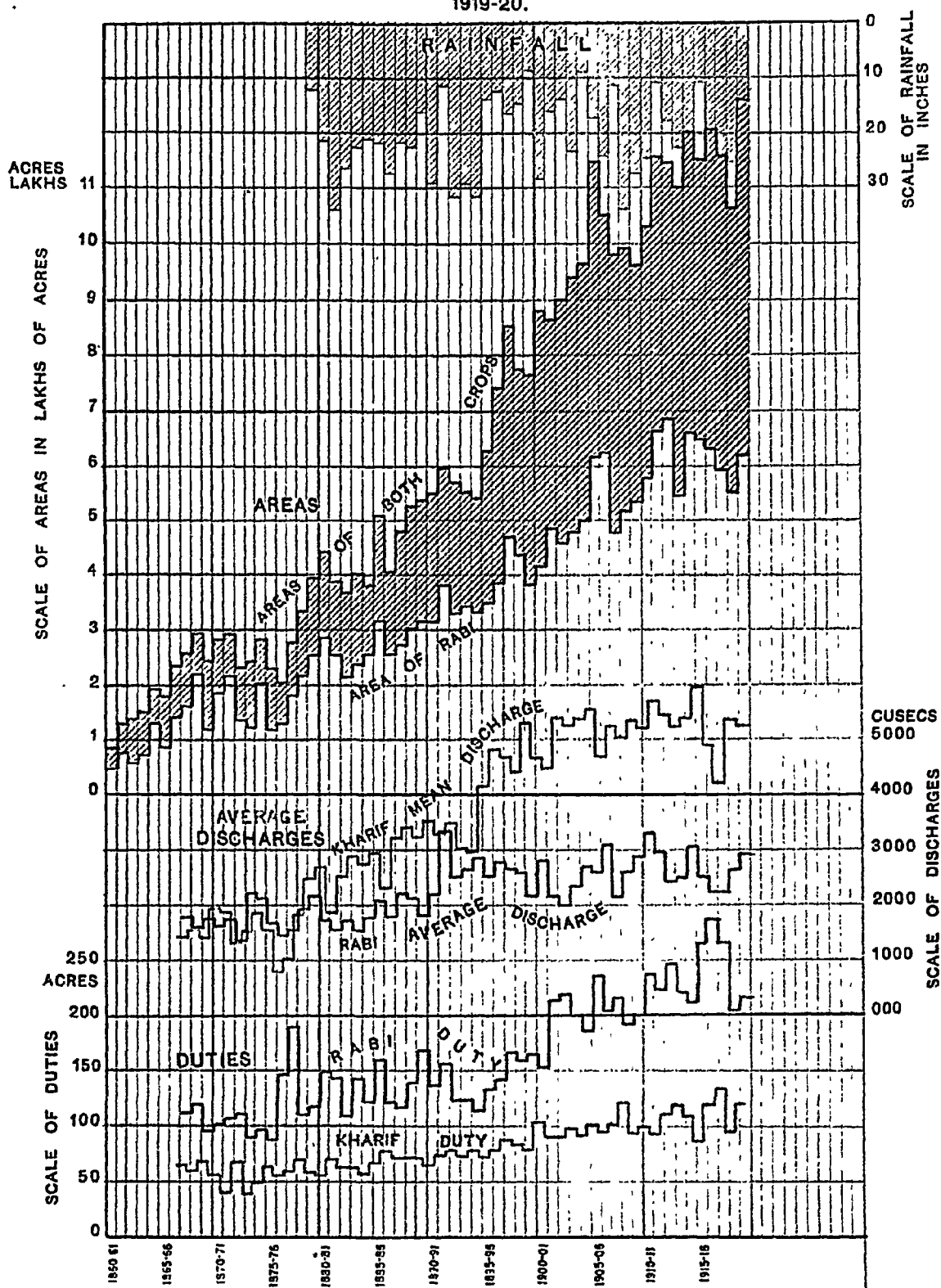
The strengthening of glacis of Rapids Nos. 2, 4 and 12 and pitching of certain lengths of the Main Line and Main Branch, Upper Banks, were also done.

Except for closures of short duration during floods in order to prevent shingle and drift wood from entering the canal remained open for the remainder of the year.

UPPER BARI DOAB CANAL.

WORKING RECORD.

1919-20.



N. B.—The intercepts in the red area show the Kharif acreage each year.

The discharges are measured at canal head and are averages for each crop.

The duties are derived from these areas and discharges.

Remarks.—The Kharif duty is fairly uniform and increasing slowly.

The Rabi duty is more irregular, due to variation in demand, but is increasing recently.

The Rabi supply decreased fairly steadily from 1891-92 to 1902-03, but nevertheless the areas increased owing to higher duty.

The Kharif supply has increased since 1894 very considerably, owing to the capacity of the canal being enlarged.

Usually the whole of the river winter supply is taken in for the Rabi crop, but after March and up to September the river supply is in excess of requirements.

(b) *Principal Crops.*—The areas of the principal crops grown during the year are compared in the following table with those grown in the previous year :—

NAME OF CROP.					1918-19.	1919-20.
Wheat	...	...	...	..	226,970	250,390
Barley	...	...	...	...	8,044	9,605
Rice	...	...	...	...	66,204	64,677
Maize	...	...	...	...	68,872	66,481
Millets	...	...	...	...	121,666	77,089
Cotton	...	...	...	..	187,084	228,078
Sugarcane	...	...	...	...	51,679	53,664

It is remarkable that the area under cotton was greater by 65,663 acres (about 41 per cent) than the average irrigation of that crop during the previous three years. It shows that cotton-growing is becoming more popular, and the cultivators have realized the importance of this crops. Area under wheat is also 10 per cent. more than that of previous year.

(c) *Agricultural conditions.*—Agricultural conditions were very favourable during the year. Owing to timely and well-distributed monsoon rainfall the *kharif* irrigation and the total area irrigated during the whole year being the largest on record.

(d) *New works contemplated.*—(1) A revised type of Radial Arm Gate at Madhopur is being designed by the Superintendent, Central Workshop Division, and it is expected that one or two gates will be ready to be fitted in the coming cold weather.

(2) A bungalow for the Sub-Divisional Officer, Gurdaspur, has been designed and its construction is to be taken in hand as soon as the question of transfer of the plot of land in Gurdaspur Civil Station has been settled.

The question of improving the drainages in the canal tract has also received attention, and the subject is being dealt with by a special officer.

The existing tube wells of the Amritsar Hydro-Electric Power do not yield sufficient supply of water for the land in their command, and canal water has occasionally to be given to supplement the supply received from the tube wells.

LOWER BARI DOAB CANAL.

(SUPERINTENDING ENGINEER—MR. R. CANNEL.)

1. The expenditure (direct and indirect) amounted to Rs. 1,10,692 and was incurred principally on the following

Capital Account—
Kharif, 1919.
Rabi, 1919-20.

works :—Constructing buildings at the new "Dhaya" Station at Balloki; reconstructing the Balloki silting tank outlet and strengthening the inlet; constructing drain near Kassowal; Sub-Divisional Officer's residential quarters at Chichawatni; Officers, Staff and Subordinates' quarters at Khane-wal; Lower Subordinates' quarters at Jaimthal; Jerahi distributary; Sub-Divisional Officer's quarters and subsidiary buildings at Naiwala; Patwar-khanas in Okara Sub-Division and several culverts on boundary roads, village roads; district roads; feeder roads, etc.

The construction of buildings was delayed for a long time owing to the rise in rates for labour and material. In order to make some progress, therefore, departmental kilns were started for the manufacture of bricks and about 1,700,000 bricks were outturned during the year.

On water-courses Rs. 71,047 were spent, bringing the total expenditure to date to Rs. 13,94,739. The recoveries effected from the cultivators amounted to Rs. 3,21,330, which represented a slower rate of recovery than was anticipated when the system was introduced.

Contribution works.—The following works were carried out through the agency of the Canal Department :—

- (a) Works were constructed for Rai Babadur Ganga Ram, C.I.E., M.V.O., in connection with his lift irrigation schemes at Khokhar, costing Rs 27,237 ;
- (b) A plantation minor was constructed for the Forest Department at R. D. 8,900 of 2-L. Minor, Forest distributary ;
- (c) Two bridges at Chichawatni and making ramps for bridges at the *Mandi* there.

2. The expenditure amounting to Rs. 1,00,476 covered the remodelling crest wall of Hudiaara Syphon ; laying down stone aprons below aqueduct at R. D. 80,038 district road bridge at R. D. 82,204 Main Line ; laying out new " Dhaya " Station at Balloki ; remodelling 3-R of 15-L and regrading 1-R of 14-L distributaries ; and digging avenue drains for establishing avenues and plantation.

3. The expenditure amounted to Rs. 4,06,974 and was incurred on ordinary maintenance to Headworks and Main Line distributaries, buildings and plantations. Rs. 10,323 were spent on the protection of Main Line masonry works necessitated by the usual initial erosion of the canal bed.

4. The canal was in flow for 322 days during the year, *i. e.*, 175 days during *kharif* and 147 days during *rabi* against 305 days in the previous year.

The monsoon broke on the 22nd July, a week later than usual. The rainfall was sufficient during the *kharif* season, but insufficient during the *rabi* season. The demand for canal water was keen throughout the year.

The average rainfall is compared below with that of the previous year :—

		1919-20. Inches.	1918-19. Inches.
Lahore District	...	16.58	8.06
Montgomery District	...	6.85	6.40
Multan District	...	6.99	4.64

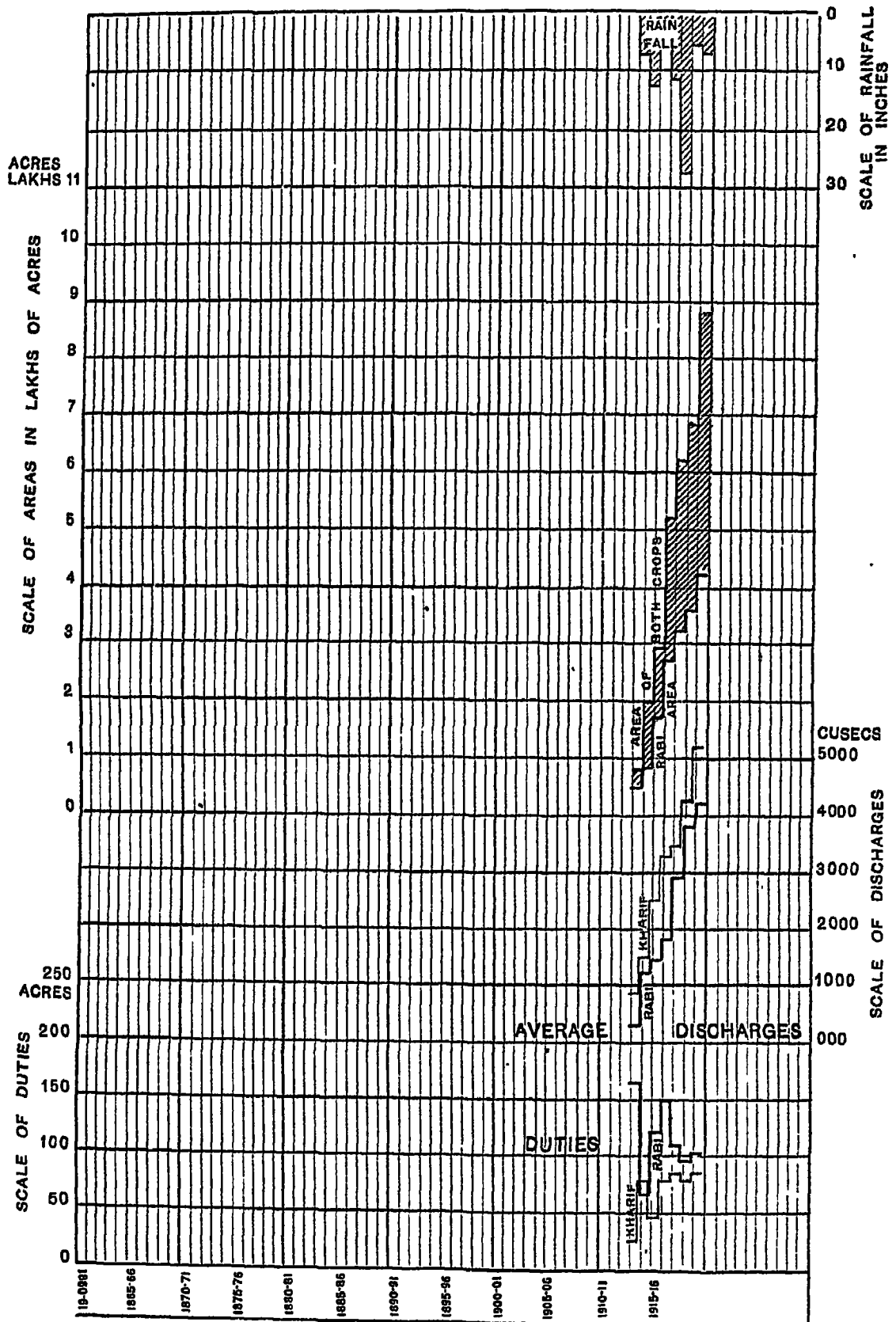
5. The following table compares the area irrigated each year since the commencement of irrigation on this canal with the annual estimated area as per the revised project estimate :—

Area irrigated— <i>Kharif</i> 1919. <i>Rabi</i> 1919-20.						As estimated in the project estimate (annual).
YEARS,			<i>Kharif.</i>	<i>Rabi.</i>	Total.	
1913-14	...	...	10,996	53,582	73,578	...
1914-15	...	...	106,302	82,002	189,204	250,000
1915-16	...	...	114,974	168,320	283,294	450,000
1916-17	...	...	248,443	266,493	514,936	650,000
1917-18	...	...	296,526	325,074	621,600	871,308
1918-19	...	...	325,593	352,411	678,004	871,308
1919-20	...	...	445,799	423,633	869,432	871,308

LOWER BARI DOAB CANAL.

WORKING RECORD

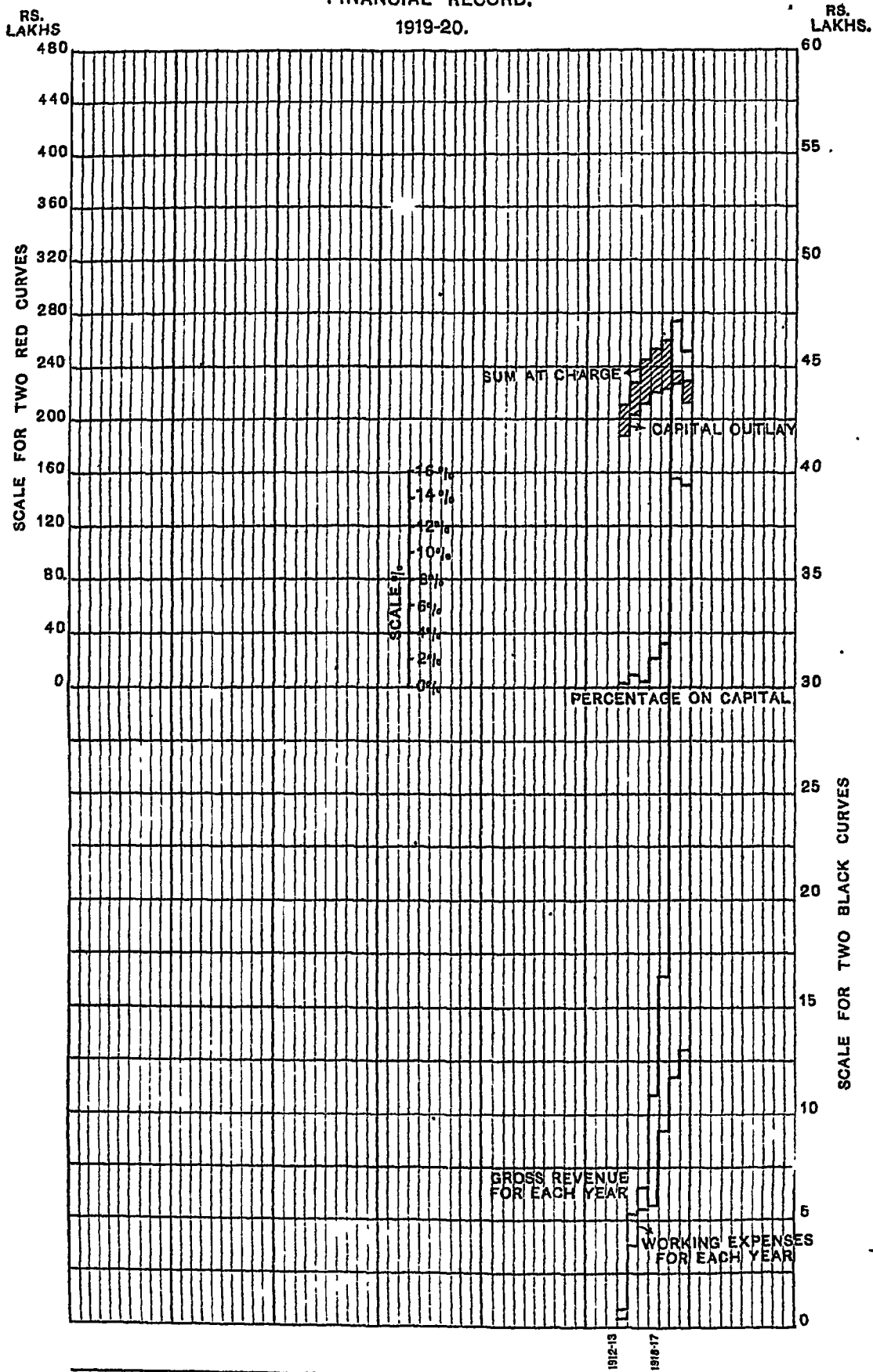
1919-20.



N. B.—The intercepts in the red area show the Kharif acreage each year.
The discharges are measured at canal head and are averages for each crop.
The duties are derived from these areas and discharges.

LOWER BARI DOAB CANAL.

FINANCIAL RECORD.
1919-20.



N. B.—The intercepts in the red area show arrears of interest unpaid up to end of each year, which being added to the capital give sum at charge.

The intercepts between the black curves give the net income each year.

Construction commenced in 1907 and the canal was opened in 1918.

This canal being one of the triple project canals its financial record, considered alone, is largely fictitious. The financial record of the triple canal project as a whole is shown on a separate diagram facing page 26.

Details of irrigation in 1919-20 by old and new villages in each Division is given below :—

DIVISIONS.	Old villages (acres).	New villages (acres).	Total, 1919-20.
Balloki	58,497	91,036	144,533
Okara	29,648	260,162	289,810
Montgomery	11,741	239,413	251,154
Khanewal	24,580	159,355	183,935
TOTAL	119,466	749,966	869,432

The progress of canal irrigation, as stated in the previous years' reports, has lagged behind that estimated in the project estimate owing chiefly to delay in the completion of the Upper Jhelum Canal and to the backwardness of colonization, but it has now practically reached the project figure.

7. The gross receipts (direct and indirect) amounted to Rs. 45,62,166, the working expenses to Rs. 12,82,370, resulting in a net revenue of Rs. 32,79,796 as compared with Rs. 35,21,935 in the previous year. The increase in the previous year was due to the fact that it included a sum of Rs. 5,81,100 on account of arrears for indirect receipts.

Financial results based on collection—

Rabi, 1918-19.
Kharif, 1919.

8. (a) *Duty*.—The duties or areas irrigated per cusec of average supply measured at canal head and at distributary heads, respectively, compares as follows with those of the previous year :—

YEAR.	KHARIF DUTY.		RABI DUTY.	
	At Canal head less escapeage.	At Distributary head (average).	At Canal head less escapeage.	At Distributary head (average).
1918-19 ...	71	87	94	115
1919-20 ...	85	102	100	126

The duties are higher this year and show better control and management.

(b) *Remissions*.—The area remitted amounted to 143,812 acres:—

	Kharif.	Rabi.	Total.
(a) Free crop under Tenancy Rules and not for crop failure.	29,390	27,376	56,766
(b) Failure of crops	44,381	42,665	87,046
TOTAL	73,771	70,041	143,812

The remissions under (a) require no explanation. Those under (b) are chiefly due to short supply in certain *chaks*, hail, flooding by rain, bad germination or cultivation, and late sowings, etc.

The principal crops affected were sugarcane, rice, cotton, maize, jowar and *chari*, in the *kharif* season and wheat, barley, sarson, gram, *toria* and *senji* in the *rabi* season.

(c) *Progress of Colonization*.—The following table gives the total culturable crown waste (allotable) area on the canal and the area allotted permanently and temporarily at the beginning and end of the year.

Total culturable Crown waste area allotable as per Mr. Joseph's classification.	Area allotted to end of 31st March 1919, permanent and temporary.	AREA ALLOTTED TO END OF 1919-20.		
		Permanent.	Temporary.	Total.
Acre.	Acre.	Acre.	Acre.	Acre.
1,016,972	934,063	526,559	492,334	1,018,893.

Great assistance to the working of the channels was afforded by the increase in temporary allotments, permanent allotments being not adequate.

In view of the enormous increase in the profits of agriculture and the value of land since 1914 a differential scale of "*Malikana*" has been sanctioned for temporary cultivation varying from Rs. 2 to Rs. 16 per matured acre, at the discretion of the Colonization Officer, according to the quality of the land.

9. Irrigation is developing gradually and will increase as more land is allotted to colonists, but development of inferior soil is rather backward owing to the temporary nature of the allotment which offer lesser incentive to make improvement. It is anticipated that as permanent grants increase the grantees will take more interest in improving the soil.

General remarks.

The colonists on this canal come from all parts of the Punjab, and larger number of "*Nomads*," the original inhabitants of the *Bar*, have been given land. Thus the methods of cultivation and the outturn of the crop differ widely, and there is room for very considerable improvement in methods of cultivation, particularly in the areas of bad soil.

UPPER CHENAB CANAL.

(SUPERINTENDING ENGINEER—MAJOR W. C. W. MILLER, O.B.E.).

1. The expenditure (direct and indirect), inclusive of establishment and tools and plant charges, was Rs. 35,064. Against this the canal received a credit of Rs. 2,55,481 (Rs. 1,49,955 realized from the colonists on account of cost of water-courses, Rs. 49,857 on account of stock transactions under the suspense account, and Rs. 55,669 on account of other miscellaneous receipts). This resulted in a credit balance of Rs. 2,20,417. The total capital outlay was, therefore, reduced from Rs. 3,57,69,567 at end of 1918-19 to Rs. 3,55,49,150 at end of the financial year under report. No large works were carried out. The expenditure was mainly incurred on construction of quarters for establishment, subordinates' rest-houses, telegraph offices, a foot-bridge near the tail of the Main Line Lower, water-courses, and boundary road culverts and fixing Kennedy Gauge Outlets in certain distributaries.

Capital Account—

Kharif, 1919.
Rabi, 1919-20.

2. The expenditure amounted to Rs. 87,707 against Rs. 30,660 in the previous year. The principal items under this head were—splaying out the nose of the Right Guide Bund at the Headworks, Merala; constructing Cunnets in Palkhu Nallah drainage system and seepage drains along Main Canal levelling and surveying for the re-alignment of the Nokhar and Raya Branches and their distributaries; remodelling the head regulator of Akbar distributary and various minors on Main Line Lower, extending avenues along Main Line Lower and its distributaries; constructing Needle Dam at R. D. 91,000, Raya Branch, and at R. D.'s 12,100 and 141,000 Muridki distributary; regrading Sadhoki distributary, R. D. 91,000 to 128,000 and Shahdara Distributary, R. D. 69,000 to 169,000, with a new fall at R. D. 88,850; extensions of the tails of the Kali and Hachhar distributaries and Gulab Singh Minor of the Sadhoki distributary.

Extensions and Improvements.

3. The expenditure amounted to Rs. 5,43,903 as compared with Rs. 6,23,964 of the previous year. There were no repairs of a special nature executed during the year. The work of improving the condition of the Canal and distributary banks noticed last year was continued, and the results are now beginning to display themselves in less frequent leakages and breaches in these Kallar-impregnated banks.

4. The *kharif* season was a favourable one. The monsoon proper began on 13th July and continued till the 5th of September; and, though the excessive rainfall in July flooded the low-lying rice lands and consequently deferred rice sowings, yet this was more than made up for during August, with the result that area irrigated in the *kharif* season was a record maximum, the total area irrigated being 303,845 acres as compared with the previous maximum of 285,917 in *kharif*, 1916. The Raya and Nokhar Branches, which are in flow during the summer only, were opened early in April, instead of, as hitherto, at the end of May or early in June. This encouraged the sowing of early *kharif* crops, and this, together with the extension of canal irrigation to *chahi* lands hitherto debarred from canal irrigation, helps to explain the magnitude of the area irrigated. The deferring of rice sowings until August, alluded to above, resulted in a large portion of the rice area not being fully matured by 1st October, the date on which the Raya and Nokhar Branches had hitherto been closed, in order to give preference to the perennial distributaries of this canal when the river supplies begin to fall below the requirements of the whole canal system. The supplies in these two branches were accordingly reduced on the 5th October, but urgent representations from cultivators resulted in their being raised again to full indent on the 13th and until the 16th *idem*. The rice crop was by this means successfully matured, and the experience gained this year resulted in an order that henceforward the *kharif* channels are, up till the 15th October, to get their full indents in preference to the perennial channels for the full development of the rice crop.

The *rabi* season was normal. Timely rainfall during the maturing season benefited the canal irrigated crops and reduced the area of remissions to almost negligible proportions.

At Gujranwala, the centre of the irrigated tract, the total rainfall recorded during the *Kharif* and *Rabi* seasons, respectively, was 19.3 inches and 4.6 inches as compared with 8.8 inches and 3.9 inches, respectively, in the previous year, and as compared with averages of 22.2 inches and 2.7 inches during the previous three years.

Demand for canal water was generally keen throughout the year. The canal was in flow for 164 days during *kharif* and 139 days during *rabi*. Rotational working of the linked canals was enforced from the 1st of October 1919.

Area irrigated—

Kharif 1919.
Rabi 1919-20.

5. The following table compares the areas irrigated during the year with preceding years and with the Project forecast:—

YEAR.		<i>Kharif</i> .	<i>Rabi</i> .	Total.	PROJECT FORECAST.		
					<i>Kharif</i> .	<i>Rabi</i> .	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1915-16	...	159,152	105,010	325,062	250,000	250,000	500,000
1916-17	...	285,017	151,550	437,477	321,181	321,181	642,362
1917-18	...	245,110	137,825	382,935	321,184	321,184	642,367
1918-19	...	204,591	222,170	426,864	321,194	321,184	642,367
1919-20	...	303,845	239,811	542,656	321,191	321,184	642,367

The total area irrigated included 504,830 acres in old proprietary villages and 37,826 acres in Colony villages.

As already noticed the area irrigated in the *kharif* season is a record ; so also is the *rabi* area. The total for the year (512,656 acres) was, however, short of the Project forecast by 105,711 acres.

The complicated system of varying the water-supply in different canal " zones, " which has hitherto retarded the development of irrigation on this Canal, is now within sight of settlement. In fact, provisional orders were issued by the Chief Engineer last cold weather which enabled some progress to be made on the scientific design of " irrigation chaks " so as to distribute the supply in the most efficient and economical manner ; and a Conference of Civil and Canal Officers held at Simla in August 1920 arrived at definite decisions tending to simplify the zonal system of distribution of supply.

6. The gross revenue (direct and indirect) amounted to Rs. 27,69,075, the working expenses to Rs. 14,78,604 and the net revenue to Rs. 12,90,471, or 3.63 per cent. on the capital outlay, as compared with 1.97 per cent. gained in the previous year. The Upper Chenab Canal is a feeder channel for the Lower Bari Doab Canal, so that, as a commercial proposition, its financial merits must not be judged by its own financial results independently of those of the Lower Bari Doab Canal.

7. (a) During the year the development of the Merala Timber Depôt, noticed in last year's Report, continued, and in September 1919, the North-Western Railway began to work the Sambrial-Merala Railway as an open line for the conveyance of sleepers from the Timber Depôt, but no arrangement for the future working of the line has yet been settled by the Railway.

(b) In connection with the report on flood restriction and utilisation of the waters of the Aik Nullah, alluded to in last year's Report, enquiry is being made into the possibility of diverting the *nullah* from the point where it emerges from Jammu State territory into the Chenab River above the Head-works at Merala.

(c) During the cold weather a considerable amount of work was done in connection with the scheme for clearing the channels of the Palkhu Nullah system and digging drains alongside the main canal for the relief of swampy areas alongside the head reach of the main canal.

(d) The entire tract irrigated by the Nokhar Branch was re-surveyed with a view to ascertaining the correct alignment of the natural drainages in this tract, and to remodelling the alignment of the Branch itself, and of its distributaries, so as to avoid obstruction of these drainages.

(e) A similar survey was carried out in the tract irrigated by the Raya Branch with a view to relieving any natural drainages which may be at present obstructed by the distributaries taking out from this Branch.

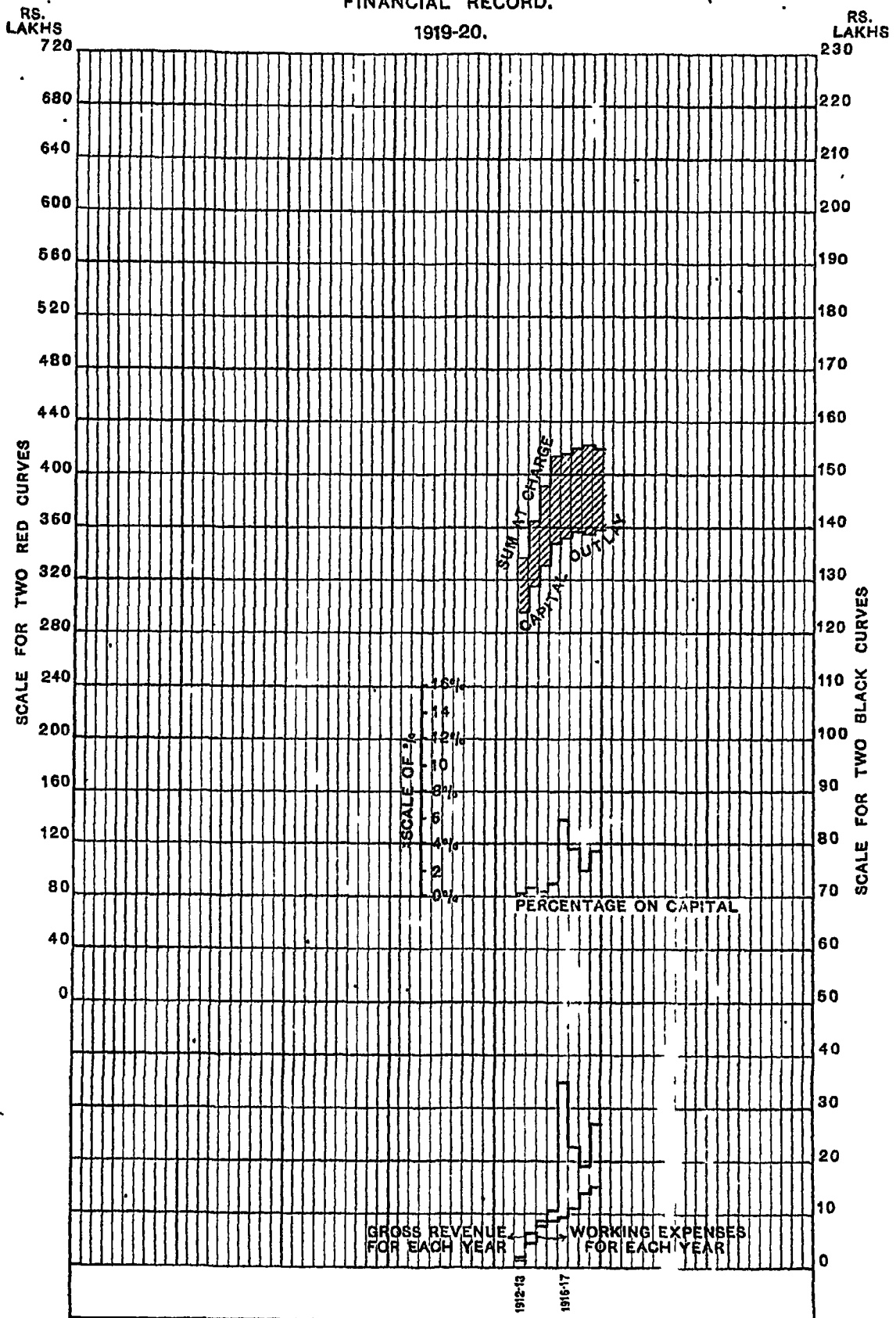
(f) Surveys were also put in hand during the cold weather for seepage drains near Chichoke Mallian rest-house to relieve the water-logging which is beginning to appear along the Main Line Lower in this locality. The Mehtasuja Sub-Division of the Raya Division was closed down at the end of the year as consisting as it did of the Shahdara distributary, with a discharge of 260 cusecs only.

(g) In the Punjab Colony Report for 1919 remarks were made on the subject of the adequacy of water-supply to the Colony villages of the Raya Branch. It has been found on enquiry that, on the whole, the area irrigated in these villages was about 50 per cent. in excess of the project forecast, and that nearly every village irrigated a larger area than had been contemplated by the Government. The date of opening of these *kharif* channels was also incorrectly stated in the Colony Report to be the middle of July. As a matter of fact, they were opened early in April.

UPPER CHENAB CANAL.

FINANCIAL RECORD.

1919-20.



N. B.—The intercepts in the red area show arrears of interest which, added to the capital, give the sum at charge.

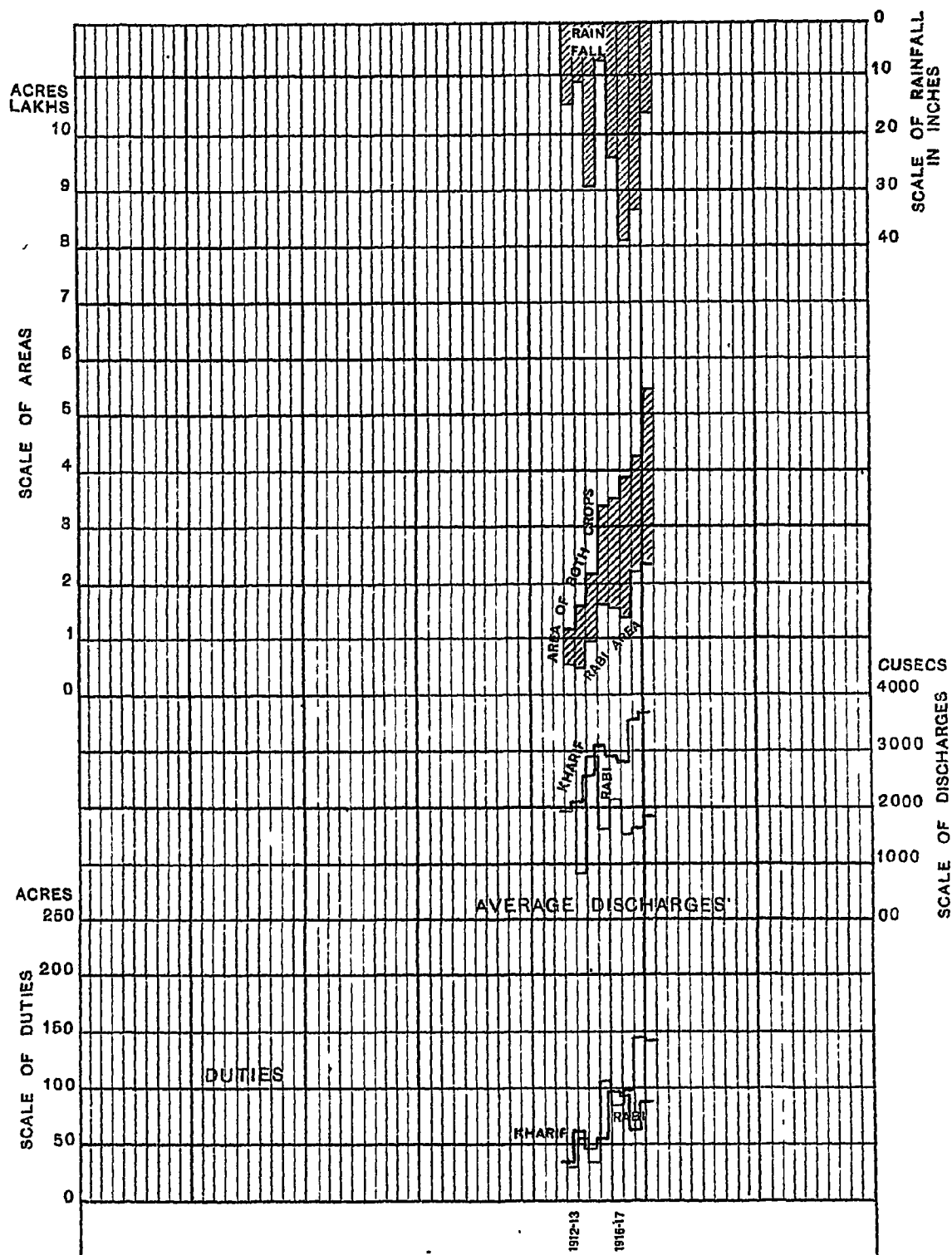
The intercepts between the black curves give the net income each year.

Construction commenced in 1905 and the canal was opened in 1912.

This canal being one of the triple project canals its financial record, considered alone, is largely fictitious. The financial record of the triple canal project as a whole is shown on a separate diagram facing page 26.

UPPER CHENAB CANAL.

WORKING RECORD,
1919-20.



A, B.—The intercepts in red aten give the Kharif irrigation each year. The discharge are measured at Merala the head of canal and give averages for each crop.
The duties are derived from these atens and discharges.

LOWER CHENAB CANAL

(SUPERINTENDING ENGINEER—MR. J. W. B. LOUGHRAN.)

The expenditure (direct and indirect) amounted to Rs. 1,84,620, bringing the total capital outlay to date Rs. 3,26,81,045. The bulk of the year's expenditure was incurred on raising the weir at Khanki in all eight bays by two feet or more (which absorbed $1\frac{1}{2}$ lakhs of rupees), but the work was not completed till a month or two after the close of the year. The rest of the expenditure was incurred on works of minor importance.

2. The expenditure of Rs. 1,34,319 was incurred in general in improving facilities for regulation, distribution, and drainage. A few of the more important items were:—
Extensions and Improvements.
 Remodelling gates of Khanki undersluices to obtain better control of the regulation; constructing a gauge well below under-sluiques on the right side; improving the drainage along the Main Line banks; land for silting tanks; drains in the Hafizabad tract; remodelling the head of the Nasrana distributary; surveying and levelling square lines in old villages in the Hafizabad Division; plantations; remodelling and adjusting outlets.

3. A sum of Rs. 7,49,684 was spent on the usual annual maintenance and repairs. Most of it was just ordinary, but there were a good many details of work covered by special estimates.
Maintenance and Repairs.

4. The *khariif* season was particularly hot and dry. There was no rain in April, May, June and July, and naturally the demand for canal water was keen. About the 26th or 27th of July the rains broke and there was widespread rainfall, particularly heavy in the East and graduating to moderate in the West. Later on in August there was a storm from the North which visited the Central canal tract and also gave moderate rain to East and West. The monsoon ceased in August. The main feature of the monsoon was shortness and intensity—it lasted three or four weeks, but the showers, though few in number, were heavy. The total quantity compares well with previous years. The rain certainly did a lot of good to standing crops, but it would have been more useful if it had occurred in smaller showers at regular intervals. In spite of the rainfall the air remained dry and the conditions were rather trying for those kinds of plants that have a large leaf area. The effect of the low humidity was particularly noticeable in two cases, American cotton and *desi* orange; on the *desi* orange it had a withering effect on the leaves; while on the cotton plants bolls were plentiful, but they would not freely open. These climatic conditions were most severe in the West, where the consequences were most marked.

The monsoon rainfall helped *rabi* operations considerably. There was some rain during the winter months, in small doses, at suitable intervals, totalling from 2·12 to 3·7 inches and all useful.

The canal was closed for 17 days in the *khariif* and 15 days in the *rabi*. The water-supply was, on the whole, satisfactory.

Rainfall.—The following table gives the rainfall of the year for *khariif* and *rabi* separately, as compared with the previous three years:—

CROP.				Lyallpur District.	Jhang District.	Sheikhupura and Gujranwala Districts.
				Inches.	Inches.	Inches.
<i>Khariif</i> , 1919	...	...	...	9·14	8·26	15·87
<i>Rabi</i> , 1919-20	...	...	...	2·18	2·24	3·70
TOTAL				11·27	10·49	19·57
1916-17	...	...	...	12·44	9·32	21·61
1917-18	...	...	...	25·10	26·44	29·95
1918-19	...	...	...	6·71	7·99	11·08

5. The following table compares the irrigation with the averages of the two previous triennia and with the figures of 1918-19:—

Cror.			AVERAGE OF THE THREE YEARS ENDING		AREA IRRIGATED DURING	
			1915-16.	1918-19.	1918-19.	1919-20.
			Acres.	Acres.	Acres.	Acres.
<i>Kharif</i>	...	...	694,635	746,032	795,545	851,161
<i>Rabi</i>	...	...	1,585,995	1,551,985	1,543,653	1,604,064
TOTAL	...	...	2,280,630	2,301,017	2,339,198	2,455,225

The area irrigated during the year was the largest on record for the *Kharif* as well as for the *rabi* season. The crops were good, especially the *rabi* crops. Some of the cotton was not up to the expectation of the cultivators of the Western Doab, but otherwise the crops were satisfactory. The principal areas were—

				Acres.
Sugarcane	...	...	...	50,979
Cotton	...	..	...	349,251
Maize	...	...	...	100,071
Wheat	...	...	...	1,607,889
Sarson	...	...	...	89,707
Gram	...	...	...	46,108

The fodder area is considerable and amounts to nearly a quarter of each crop.

Of the area matured 2,018,506 belongs to Colony villages and the rest 436,719 acres to old villages.

The *kharif* duty was 95 and the *rabi* 208. In the previous year the corresponding figures were 84 and 211.

Remissions.—In the *Kharif* season revenue was remitted on 4,540 acres. This includes 492 acres under tenancy rules (not *kharaba*) and 658 acres damaged by insects and blight. Some remissions had to be given on account of the heavy rain on the eastern borders of the canal where stiff soil existed. The *rabi* remissions amounted to 3,404 acres. About half of this is covered by 861 acres of bad germination and 815 acres under tenancy rules.

6. The net revenue amounted to Rs. 1,46,15,899, or 44.72 per cent. on an outlay of Rs. 3,26,81,045. Corresponding figures for the previous year are—

Financial results based on collections—
Rabi 1918-19.
Kharif 1919.

				Rs.
Capital outlay	...	...	...	3,24,96,216
Net Revenue	...	...	...	1,42,49,271
Percentage on Capital	...	...	...	43.85

The increase in the revenue was due to a larger area matured and assessed.

The accumulated net profits after defraying interest charges have increased from Rs. 15,19,86,744 to Rs. 16,55,13,132.

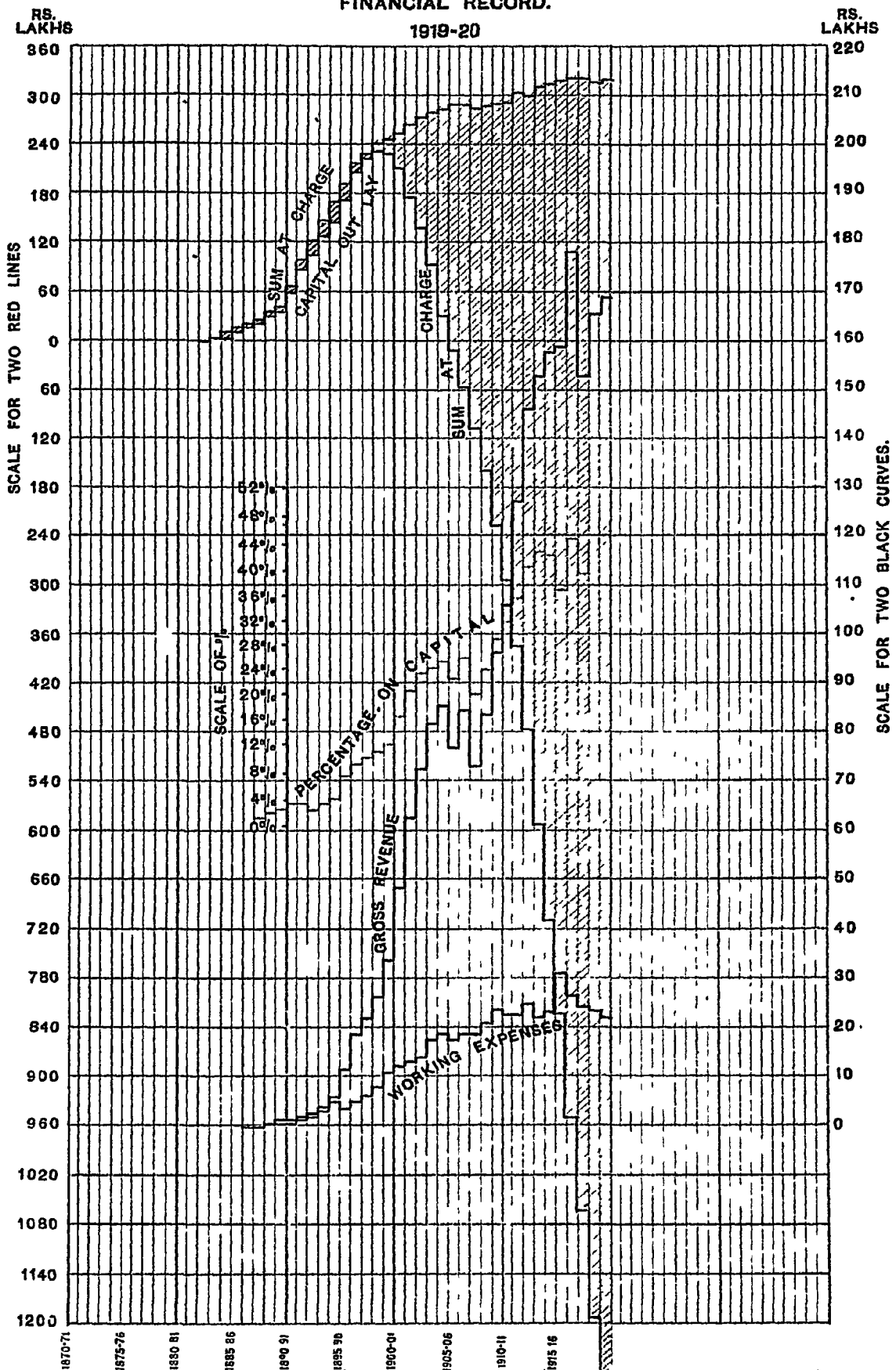
7. The raising of the Weir at Khanki was completed a few months after the close of the year under review. Sanction was received when the cold weather working season had already commenced and all details, both preliminary and construction, had to be done during the season. The work was satisfactorily completed without mishap, though one freshet, in February, of considerable magnitude, caused some trouble and alarm. Fortunately the completed bays were able to deal with this flood.

General Remarks.

LOWER CHENAB CANAL.

FINANCIAL RECORD.

1919-20



N. B.—The intercepts in red area show arrears of interest (which are small on this canal) and which being added to the capital give sum at charge.

The intercepts in the blue area are accumulated profits all arrears of interest were paid up in 1898-99.

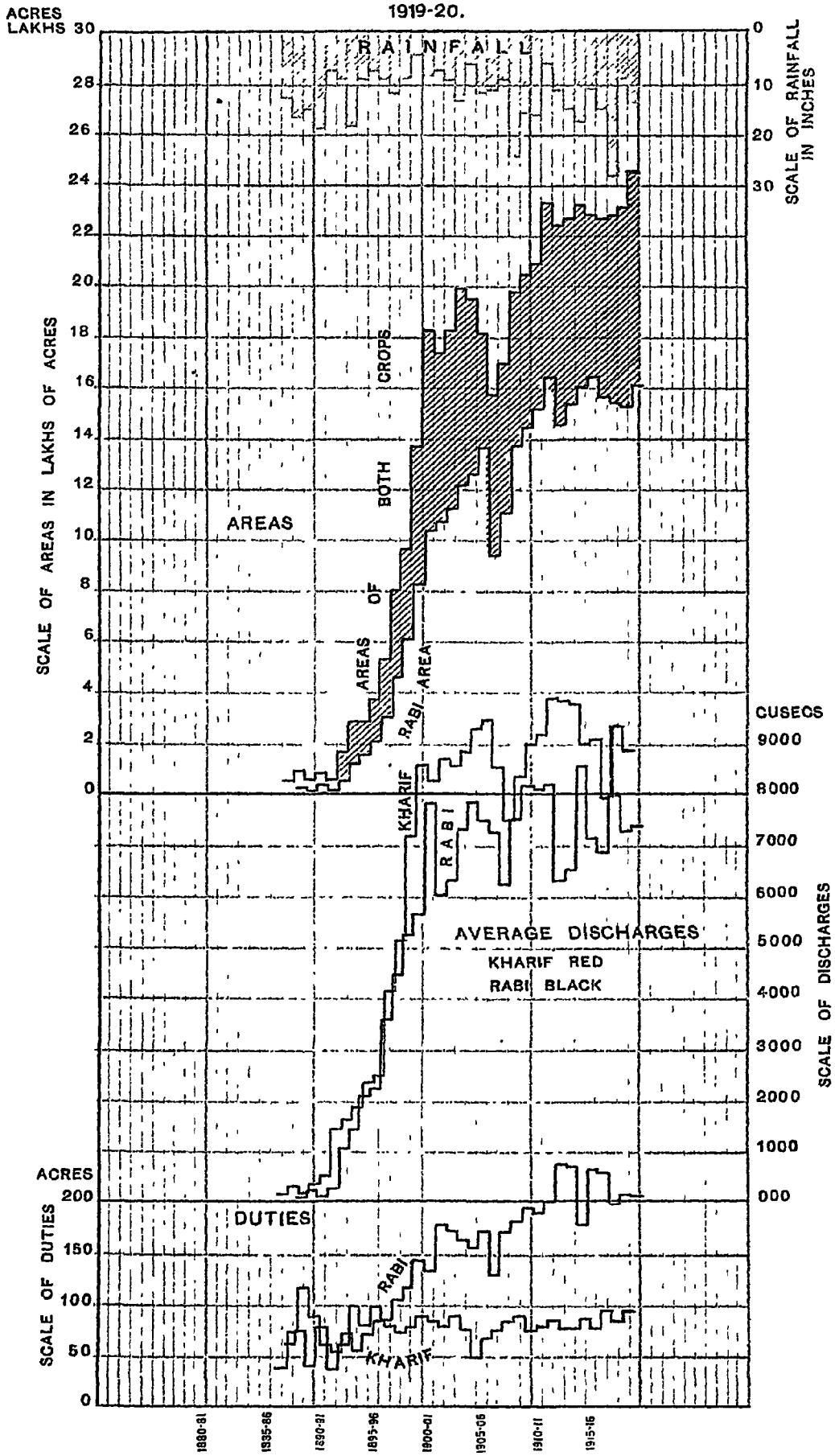
The intercepts between the two black lines give net revenue.

Remarks—This canal differs greatly from the older canals, having been completed much more rapidly and revenue earned much sooner. It has already reimbursed the whole of its capital from accumulated clear profits, and pays well over 20% on its capital.

LOWER CHENAB CANAL.

WORKING RECORD.

1919-20.



N. B.—The intercepts in the red area show the Kharif acreage each year.

The discharges are measured at canal head and give averages for each crop.

The duties are derived from these areas and discharges.

The Rabi winter supply is comparatively high and reliable on this canal.

UPPER JHELUM CANAL.

(SUPERINTENDING ENGINEER—MR. A. R. MURRAY).

1. The expenditure (direct and indirect) was more than balanced by realisations on account of the sale of Tools and Plant rendered available by the completion of works and by credits on account of stock transactions under the Suspense Account and miscellaneous receipts.

Capital Account.—

Kharif, 1919.
Rabi, 1919-20.

The capital account, therefore, showed a credit balance of Rs. 4,80,955, which reduced the total capital outlay to the end of the year to Rs. 4,45,19,018.

The principal works carried out were :—Construction of part of the Phalia distributary and its minors ; boundary road culverts in the Gujrat Division, and the excavation of a seepage drain from R. D. 398,800 to 412,940 Main Canal, to reduce water-logging.

2. Expenditure amounted to Rs. 22,989. The works carried out were of minor importance and call for no special mention.

Extensions and improvements.

3. The expenditure amounted to Rs. 3,61,153. In addition to ordinary repairs to works of all kinds the following special works were executed :—Repairs to and extension of the downstream floors of Suketar No. II and the Jabha Level Crossings, necessitated by the retrogression of levels which had taken place in the beds of the torrents downstream of the crossings ; pitching and revetting the slopes of the Mangla Cut ; repairs to the outfall of the Sankhya syphon, and the guide bank upstream of the Surat Syphon.

Maintenance and repairs.

4. The following statement compares the rainfall registered during the year at selected stations with the averages of past years :—

Nature of seasons and state of Demand and Supply.—

Kharif, 1919.
Rabi, 1919-20.

STATION.	Division.	RAINFALL FOR THE YEAR 1919-20.			Average of past years.
		Kharif.	Rabi.	Total.	
		Acres.	Acres.	Acres.	Acres.
Mangla ...	Jhelum ...	27.64	10.26	37.90	32.51
Wassu ...	Phalia ...	14.92	3.70	18.62	15.14
Busal ...	Do. ...	11.73	2.95	14.68	11.83
Pauranwala ...	Gujrat ...	19.49	6.53	25.82	16.93
Karariwala ...	Do. ...	19.85	6.02	25.87	22.06

During the *kharif* season the rainfall was mainly confined to the months of July and August. September was a dry month and river supplies fell rapidly, and rotational working of the five linked canals had to be resorted to from the 4th of October.

During the earlier part of the *rabi* the demand for water exceeded the supply, but there was good rainfall in December and January, and, generally speaking, water was ample during the latter-half of the season. The quality of the *rabi* crop was exceptionally good, and, on the whole, from an agricultural point of view the year was a favourable one.

This is the fourth year, during which the waters of the rivers Jhelum and Chenab have been apportioned to the five linked canals, the Upper and Lower Jhelum, the Upper and Lower Chenab and the Lower Bari Doab Canals, and, although, there have been difficulties, inasmuch as it is impossible to foretell, with absolute accuracy ; what supplies will be available for distribution, general results have, hitherto, been satisfactory.

5. The following table compares the areas irrigated and assessed with those of preceding years, and with the Project forecast :—

YEAR.	AREA IRRIGATED.			PROJECT FORECAST.		
	Kharif.	Rabi.	Total.	Kharif.	Rabi.	Total.
	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.	Acrea.
1917-18 ...	67,208	109,798	177,006	121,000	121,000	242,000
1918-19 ...	94,862	151,747	246,609	153,000	153,000	306,000
1919-20 ...	130,851	168,006	298,857	174,000	174,000	348,000

The results showed an increase of 21 per cent. over the previous year's figures.

Development of irrigation, although satisfactory, is still short of the project forecast, but, in this connection, due regard should be had to the fact that irrigation commenced a year later than the project anticipated.

The total area of new Colony lands is 42,000 acres, irrigated from the Gujrat Branch. This is now almost completely allotted and under cultivation to the full extent proposed. At present the area receives a copious water supply owing to the fact that all the village land on this Branch has not yet been broken to the plough.

The Forest Department have commenced operations on a *shisham* plantation, irrigated from the Bhalwal distributary of the Gujrat Branch. The ultimate area under forests will probably be 7,000 acres.

6. The gross receipts amounted to Rs. 12,09,729 and the working expenses to Rs. 10,11,654, resulting in a net revenue of Rs. 1,98,075, or 0.44 per cent. on the capital outlay.

Financial results based on collections—
Rabi 1918-19.
Kharif 1919.

7. The downstream movement of the shoal upstream of the canal head works at Mangla, due to the draught towards the canal, has caused some shoaling in the neighbourhood of the head, a disquieting feature, which will require careful future watching.

General remarks.

Some large floods were passed across the canal during the monsoon at the various drainage crossings and the stone protection downstream of the Suketar No. II and Jabha Level Crossings was damaged by scour to a serious extent, necessitating extension of the masonry flooring and other repairs. The remainder of the numerous cross drainage works withstood the strain without serious mishap. A large number of the depressed drainage syphons have been fitted with disc valves, by means of which a supply of water from the canal can be passed through them. This constitutes a safeguard against total blocking of the barrels.

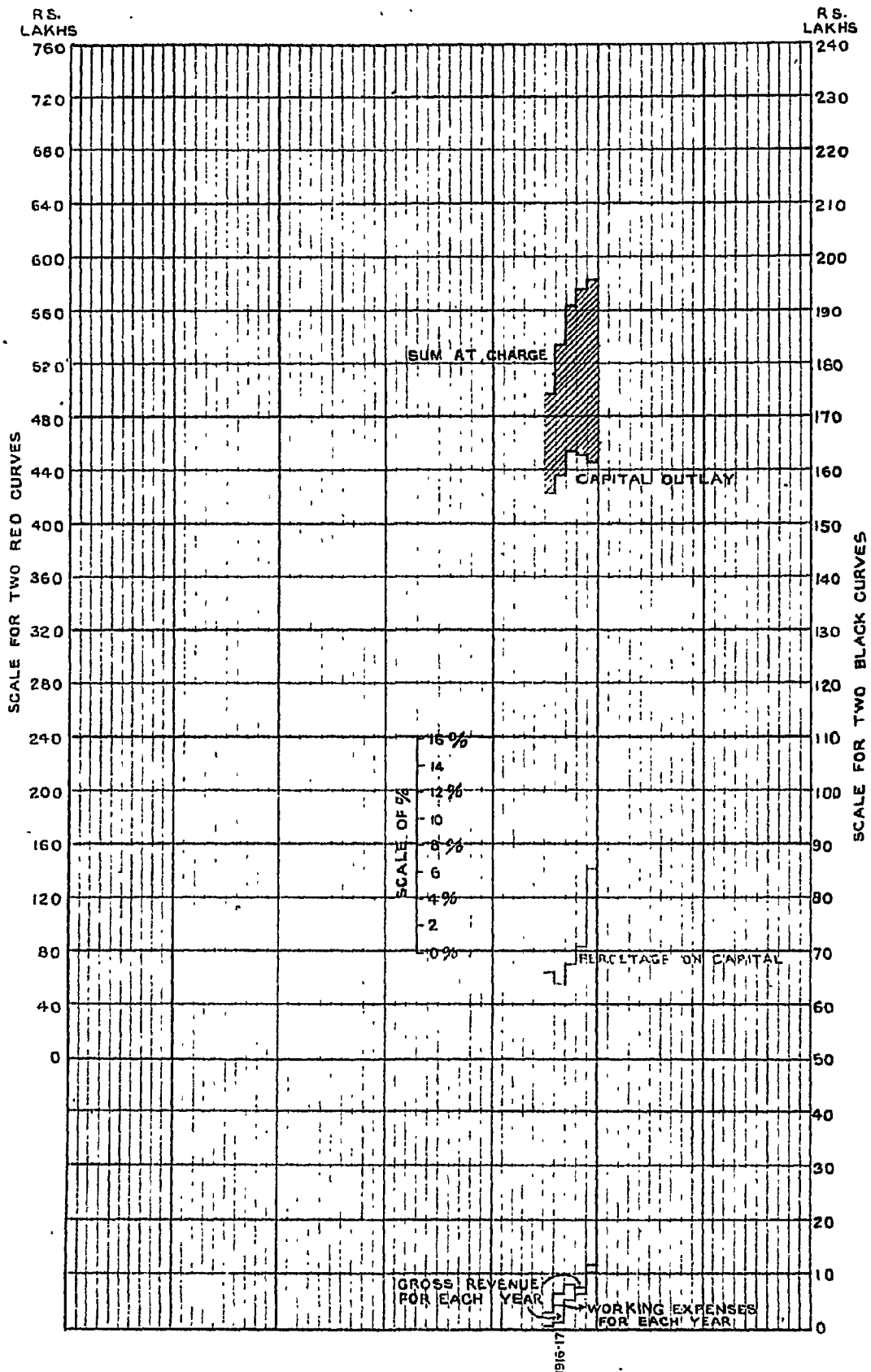
The subject of water-logging, due to percolation from the canal received constant and careful attention and remedial measures were put in train. The locality in which super-saturation is most in evidence is that lying to the right of the reach of the Main Canal, between R.D. 390,000 and 410,000 in the villages of Machhiana, Chak Qazi, Samanpindi, Saroki, and Sheikh. The remedy resorted to in this case is surface drainage which, it is hoped, will prove successful in stemming the evil.

Water-logging is also in evidence to an undesirable extent in the Rasul Bela to the right of the high land on which the canal is situated. This

UPPER JHELM CANAL

FINANCIAL RECORD

1919-20.



N. B.—The intercepts in the red area show arrears of interest unpaid up to end of each year, which being added to the capital give sum at charge.

The intercepts between the black curves give the net income each year.

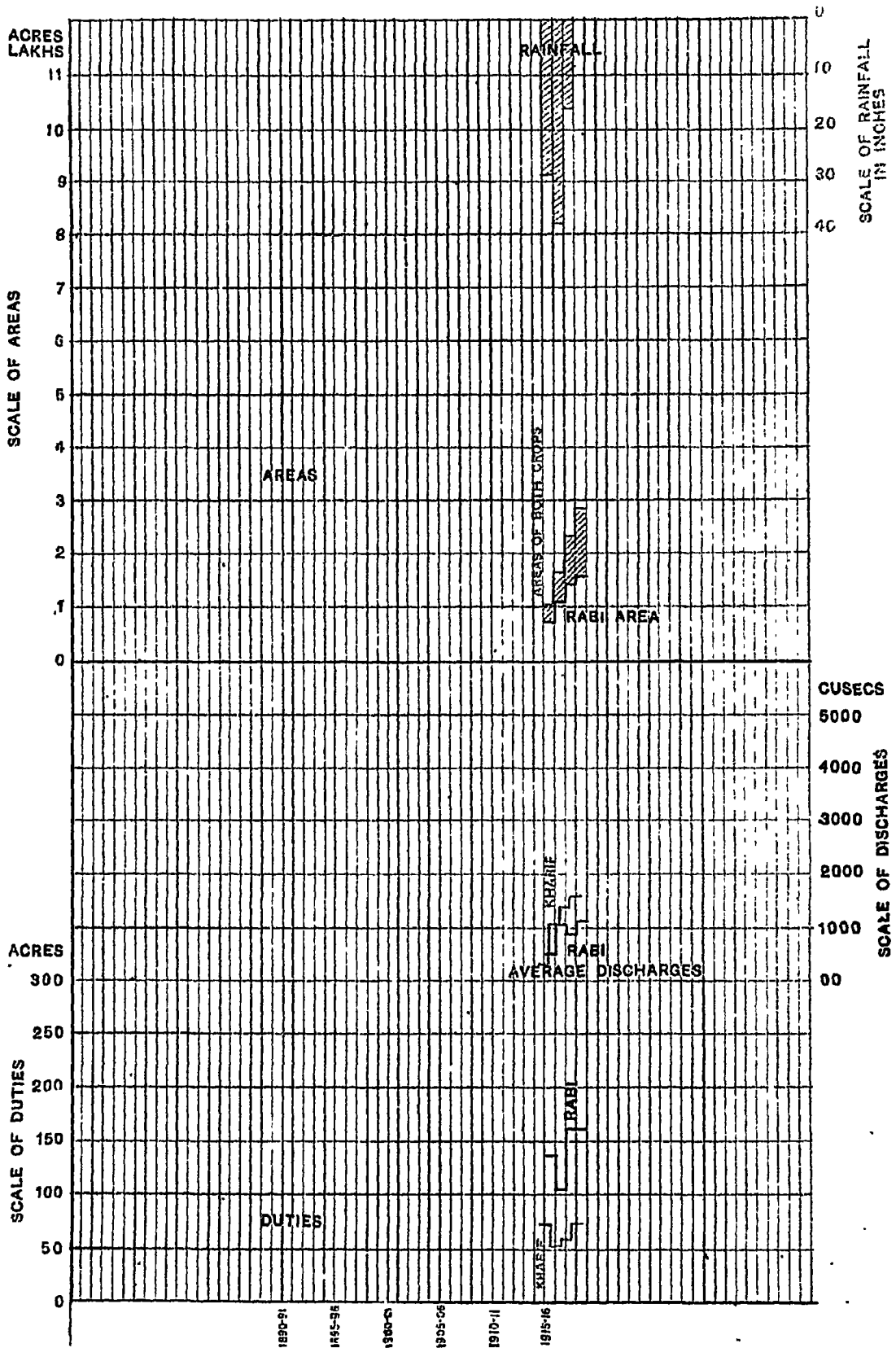
Construction commenced in 1905 and the canal was opened in 1915.

This canal being one of the triple project canals its financial record, considered alone, is largely fictitious. The financial record of the triple canal project as a whole is shown on a separate diagram facing page 26.

UPPER JHELUM CANAL

WORKING RECORD

1919-20.



N. B.—The intercepts in the red area show the kharif acreage each year.

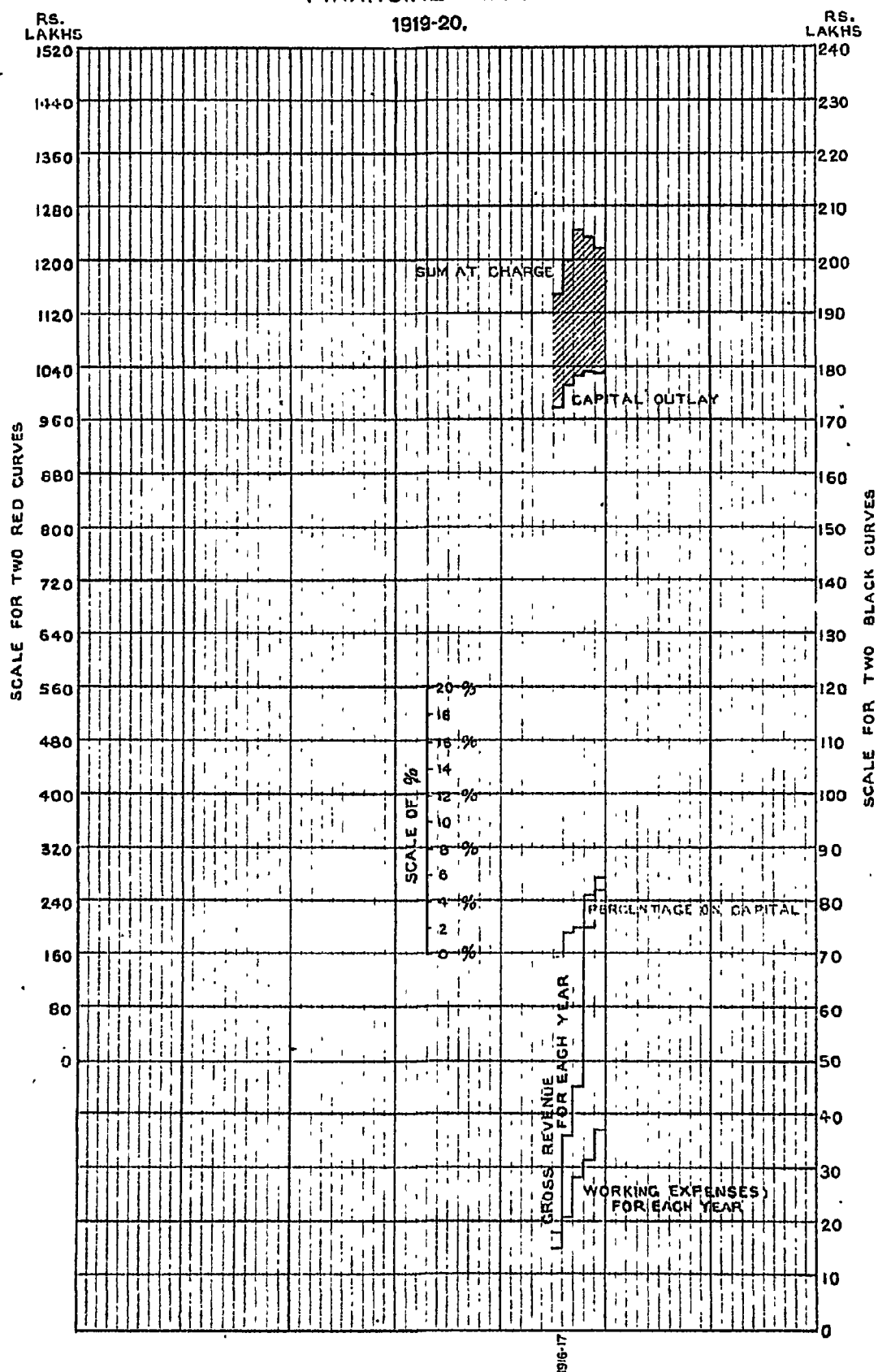
The discharges are measured at canal head and are averages for each crop.

The duties are derived from these areas and discharges.

TRIPLE CANAL PROJECT

UPPER JHELMUM, UPPER CHENAB AND LOWER BARI DOAB CANALS COMBINED

FINANCIAL RECORD



N. B.—The intercepts in the red area show arrears of interest unpaid up to end of each year, which being added to the capital give sum at charge.

The intercepts between the black curves give the net income each year.

Name of Canal.	Construction commenced in.	Canal was opened in.
Upper Jhelum Canal	1905	1913
Upper Chenab Canal	1906	1912
Lower Bari Doab Canal	1907	1913

case is complicated by the fact that the area is subject to inundation from the Jhelum river during high flood, a circumstance which would seem to point to its acquisition as the most suitable measure to adopt.

The year under review was, on the whole, a favourable one. There were no serious calamities or epidemics. There is yet considerable scope for development of irrigation from the Gujrat Branch; as four of the minors on the Phalia distributary have not yet been completed. The demand for water is becoming increasingly keen as the more backward cultivators realize the benefits of irrigation.

There was some scarcity of labour during the working season and labour rates continued to show a marked upward tendency.

8. The Thal Survey Division was formed on the 7th November 1919. This Division was principally engaged in making preliminary arrangements for instruments and camp equipment. On receipt of some levels and staves from Calcutta at the end of January 1920, double levelling of the base line was started, progress to the end of March 1920 being 245 miles. Single levelling was commenced in February and 382 miles were completed in addition to a plane table survey of 3 of the 4,000 acre rectangles.

No. 17 Party, Survey of India, started field work at Leiah early in January and closed at Wan Bhachran on the northern boundary of the Thal at the end of March, doing nearly 200 miles of precise levelling and establishing about 60 bench marks.

The Survey of India, Sindh Sagar Party, continued the demarcation of the Thal, into 100-acre rectangles, the progress during the year being 3,549 square miles, and up to date 7,194 square miles.

Sub-demarcation into 10-acre rectangles was commenced by the Civil Revenue staff at the end of December and 893 square miles were completed by the end of the working season.

The total expenditure incurred during the year was 307,373.

LOWER JHELM CANAL.

(SUPERINTENDING ENGINEER—MR. W. R. SANGSTER, C.I.E.)

1. The expenditure (direct and indirect) amounted to Rs. 3,07,380, bringing the total outlay to end of the year to Rs. 1,69,84,909. The expenditure was incurred chiefly on remodelling head regulator, undersluices, Weir, Main Line, Rattokala, Lalian, Bucha, Faruka, Jholpur and certain distributaries of Northern Branch; constructing quarters at Rasul for Upper and Lower Subordinates, junior clerks and mistries, one block of 5 units each; and also Sub Divisional officers' quarters at Lahuwali and Shahjiwana.

Extensions and Improvements.

2. Expenditure amounting to Rs. 77,750 was incurred chiefly on—

Dismantling and refitting shutters in bays Nos. 7 and 8 of the Rasul Weir; alterations to caissons at Rasul and fall at R. D. 64,000 Northern Branch; excavating outfall channel for Badshahpur drainage syphon; providing stand pipes for measuring heads of pressure under Rasul Weir; repairing and strengthening downstream floor of undersluices; acquiring land for marginal bund of Darapur torrent; replacing diaphragm arch of Sulki Escape Head; extending plantations along Northern Branch and its distributaries and avenues along Ghazni distributary; fixing Kennedy Gauge outlets on Faruka distributary and its minors and tightening notches of fall at R. D. 58,000 Sulki Branch.

3. Expenditure to the extent of Rs. 2,02,824 was incurred on the annual maintenance of channels, masonry works, buildings, etc.

Maintenance and Repairs.

Nature of season and state of demand
and supply—

Kharif, 1919.
Rabi, 1919-20.

4. The rainfall throughout the year is compared below with that of the previous 3 years:—

DISTRICT.	Season.	YEARS.			
		1916-17.	1917-18.	1918-19.	1919-20.
		Inches.	Inches.	Inches.	Inches.
Shahpur ...	<i>Kharif</i> ...	14.36	22.16	5.38	9.0
	<i>Rabi</i> ...	3.20	3.42	3.91	3.08
	Total ...	15.56	25.58	4.29	12.58
Jhang ...	<i>Kharif</i> ...	9.77	17.77	5.16	7.76
	<i>Rabi</i> ...	0.67	2.22	2.47	2.65
	Total ...	10.44	19.99	7.63	10.41

The *kharif* season was, on the whole, favourable. No calamities occurred. The cotton crop was good, and suffered no serious damage from any cause. The rainfall during the year was on the whole satisfactory, but the monsoon withdrew somewhat early, and there was no more rain till the end of December with the result that *rabi* sowings were solely dependent on canal water and were somewhat later than usual. The winter rains, however, were of great benefit to the crops. During the *rabi* season the demand was keen, and as usual, since the opening of the Triple Project Canals, the supplies of water in the rivers Jhelum and Chenab were distributed in rotation among the 5 connected canals and during 4 periods of 12 days each, the Lower Jhelum Canal received only small supplies varying from 500 to 1,000 cusecs. The distribution, however, was efficient, and the effect of the restricted supplies was not very much felt except in October and November, when the demand on account of "*zaid*" *kharif* and *rabi* was very keen.

The total area on which revenue was remitted was 4,475 acres, including 2,112 acres remitted under tenancy rules.

5. The canal was closed at its head for 20 days during *kharif* partly on account of slack demand and partly on account of floods in the river, and for 9 days during *rabi* for special repairs to works.

6. The area irrigated compares as follows with the corresponding figures of the averages of the two preceding triennia and the figures of 1918-19:—

Area irrigated—

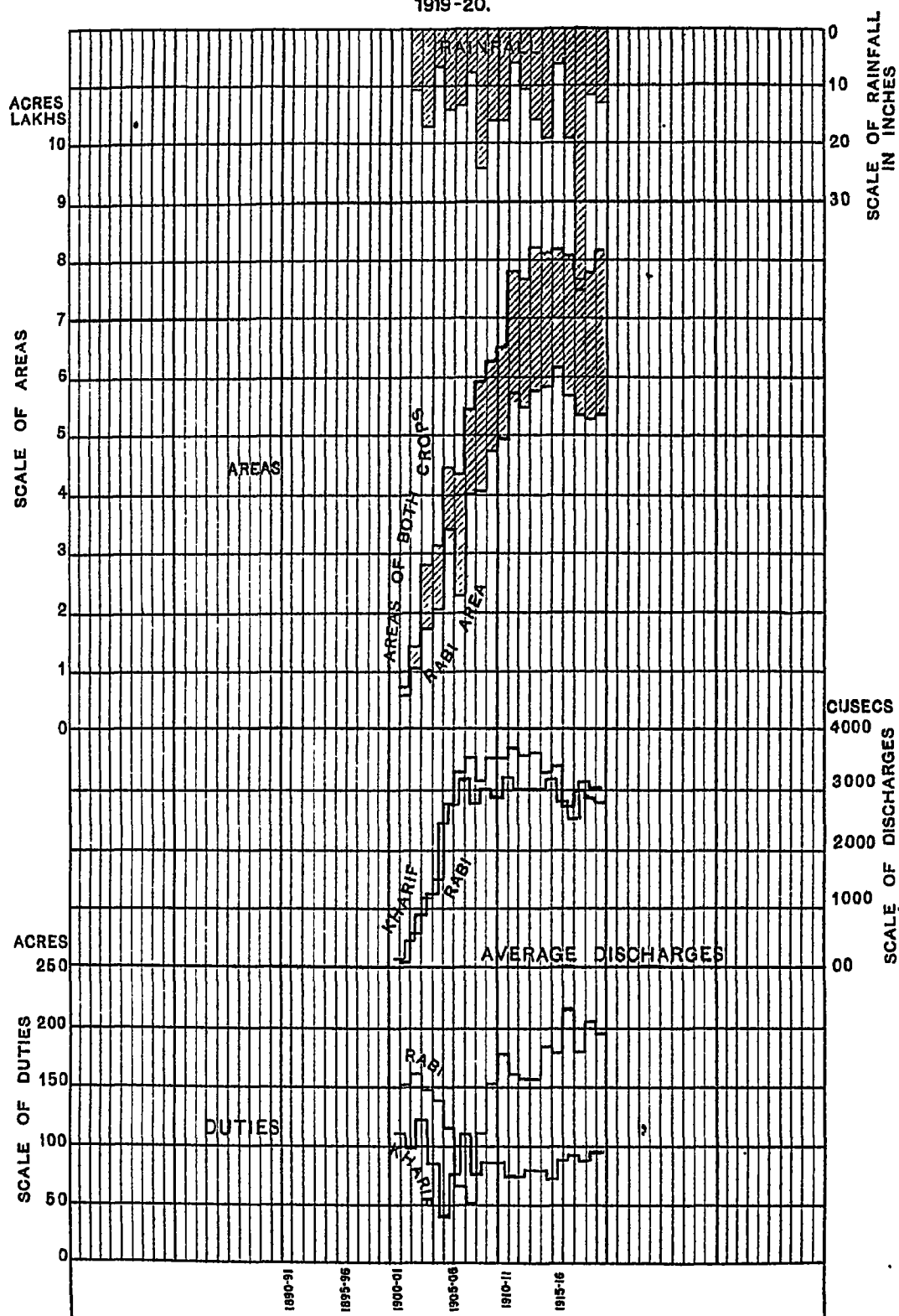
Kharif, 1919.
Rabi, 1919-20.

SEASONS.	AVERAGE OF THE 3 YEARS ENDING		AREA IRRIGATED DURING	
	1915-16.	1918-19.	1918-19.	1919-20.
	Acres.	Acres.	Acres.	Acres.
<i>Kharif</i> ...	234,65	241,157	251,601	284,070
<i>Rabi</i> ...	192,334	541,419	525,895	534,830
Total ...	526,999	782,576	777,496	818,900

The area irrigated in *kharif* was the largest on record, conditions having been generally favourable. The *rabi* area, though less by 57,000 acres only

LOWER JHELM CANAL.

WORKING RECORD.
1919-20.

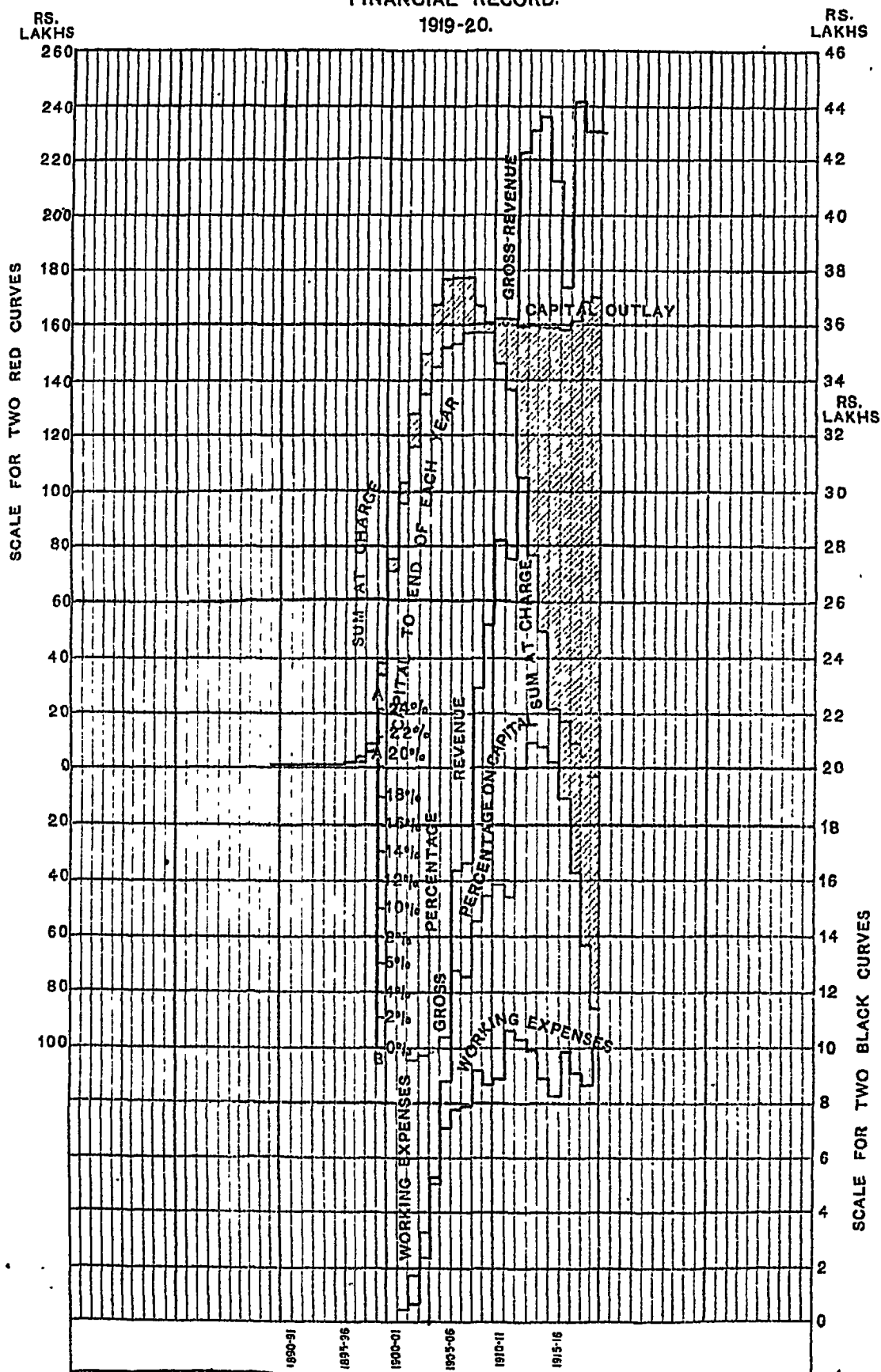


N.B.—The intercepts in red area give the Kharif irrigation each year. The discharges are measured at mile 14 of the main canal and give averages for each crop. The duties are derived from these areas and discharges.

LOWER JHELM CANAL.

FINANCIAL RECORD.

1919-20.



N.B.—The intercepts in the red area show arrears of interest which, added to the capital, give the sum at charge.

The intercepts in the blue area give the accumulated profits.

The scheme was commenced in earnest in 1898-99 and opened in 1901. Until 1905-06 the canal did not pay any interest on its capital cost this being due to free remissions of water rates on new irrigation.

than the average of the triennium 1915-16, owing to restriction of water supply consequent on the opening of the Upper Jhelum Canal, does not compare badly with the results of the years subsequent to 1915-16.

7. The gross receipts (direct and indirect) amounted to Rs. 42,92,628. Financial results based on collections—
Rabi, 1918-19. the working expenses to Rs. 10,11,210, and
Kharif, 1919. the net revenue to Rs. 32,81,418 giving a return of 19·32 per cent. on the capital outlay to end of the year. This return was 1·17 per cent. less than that of the preceding year, and was due to—

- (i) an increase in the working expenses by about Rs. 1,50,995; and
- (ii) a decrease in the indirect receipts due to a revision of the amount of the fixed debit on account of increased cost of Civil Administration and pre-existing revenue for the quinquennial period commencing from 1st April 1918, thereby raising it from Rs. 2,76,000 to Rs. 3,93,800, involving a deduction of Rs. 2,35,600 in excess of the similar figures of the previous year.

The figures for the year 1919-20 and the average of the preceding 3 years are compared below :—

ITEM.	Average triennium 1916—19.	1919-20.
	Rs.	Rs.
<i>Direct receipts.</i>		
Occupier's rates	27,53,243	(a) 27,54,701
Miscellaneous receipts	62,535	(b) 80,390
Total Direct receipts	28,15,778	28,35,091
Indirect receipts	16,65,839	(c) 14,57,537
Total Direct and Indirect receipts	44,81,617	(d) 42,92,628
Charges to Revenue	9,10,081	10,11,210
Net Revenue	35,61,636	32,81,418
Percentage on capital	21·36	19·32
Net Revenue less interest	30,16,005	27,00,000

(a) The increase under Occupier's rates as compared with the average of the previous three years is due to an increase in the area assessed during the two crops, assessment for which was collected during the year. The average per acre assessed works out to Rs. 3·1 practically the same as for the previous triennium.

(b) The increase under Miscellaneous receipts was due to larger realizations from flour mills and other sources.

(c) The decrease in indirect receipts is due to the revision of the fixed debit against the Canal as explained in paragraph 7 above.

(d) The working expenses were about Rs. 91,229, more than the average of the last 3 years due to the increased cost of labour and the high prices of materials. The incidence of working expenses per acre of area assessed was 1·24, as compared with 1·13 in the preceding triennium.

8. (a) The agricultural and other conditions of the year have been described in paragraph 4 above. The relative performances of the last six *Rabi* seasons may be compared by the following values of Δ (delta) :—

<i>Rabi</i> 1914-15	...	...	...	1·96
<i>Rabi</i> 1915-16	...	...	...	1·6
<i>Rabi</i> 1916-17	...	...	...	1·5
<i>Rabi</i> 1917-18	...	...	...	1·7
<i>Rabi</i> 1918-19	...	...	...	1·97
<i>Rabi</i> 1919-20	...	...	...	1·8

(b) The following remodelling and 'building' works were completed during the year :—

Constructing Sub-Divisional Officer's quarters and subsidiary buildings at Lahuwali.

Remodelling Head Regulator Malkewala Minor and the following works are in progress :—

Remodelling Rasul Weir.

Do. Head Regulator.

Do. Undersluices.

Do. Main Line, Lower Jhelum Canal.

Do. all the branches, distributaries and Minors on the Lower Jhelum Canal.

The remodelling work could not be pushed on very vigorously owing to scarcity of labour and to the exorbitant rates demanded by contractors, both for materials and for work. The manufacture of bricks and lime has had to be begun departmentally in order to try and secure some progress without giving in to the exorbitant demands of contractors.

UPPER SUTLEJ INUNDATION CANALS.

(SUPERINTENDING ENGINEER—RAI BAHADUR LALA WAZIR CHAND CHOPRA, B A.).

The expenditure (direct and indirect) of Rs. 6,977 was incurred under the Suspense Account (stock transactions) bringing the total outlay to the end of the year to Rs. 18,18,373.

Capital account—

Kharif, 1919.
Rabi, 1919-20.

2. Expenditure amounted to Rs. 7,841 against Rs. 10,646 in the previous year and was chiefly incurred on constructing two bridges on the Upper Sohag Canal, combined stable and servants' quarters at Fateh Mohammad Regulator, a well at Ladhewal rest-house, flood outlets, and some special works in certain other channels.

3. Expenditure amounted to Rs. 1,97,956 which, in addition to ordinary maintenance and silt clearance of channels, was incurred on the following works :—Digging channel above the Dalla Bridge ; diverting the Lower Sohag and Katora canals ; raising the banks of the Lower Sohag canal ; remodelling head of the regulator of Bhumanshah distributary ; and making roads on the Upper Sohag canal.

Maintenance and repairs.

4. The following table compares the irrigation of the year with that of the year 1918-19 and the averages of the two previous triennia :—

Crops.	AVERAGE OF THREE YEARS ENDING				AREA IRRIGATED DURING				REMARKS.
	1915-16.		1918-19		1918-19.		1919-20.		
	Gross.	Net.	Gross.	Net.	Gross.	Net.	Gross.	Net.	
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	
Kharif ...	167,045	156,378	164,578	153,898	151,155	136,253	153,679	138,662	
Rabi ...	166,193	166,193	171,964	171,964	107,344	107,344	149,570	149,570	
TOTAL ...	333,238	322,571	336,502	325,862	258,499	243,597	343,249	338,532	

The net area assessed was more by 10,961 and 7,675 acres, as compared with the averages of the two triennia ending 1915-16 and 1918-19, respectively, and by 89,935 acres, as compared with the year 1918-19.

Area irrigated—

Kharif, 1919.
R 34, 1918-19.

5. The gross revenue collected amounted to Rs. 7,43,560 and the working expenses to Rs. 4,49,881, giving a net revenue of Rs. 2,93,679, or a return of 16.15 per cent. on the capital invested. In the previous year the figures of net revenue and the percentage were Rs. 4,64,512 and 25.63, respectively. The falling off is attributable to a decrease of 82,187 acres in the area assessed during the two seasons, the assessment of which was collected during the year.

6. (a) The following table shows the dates of opening and closing of the canals, together with the corresponding dates of the previous year :—

Name of canal.	DATE OF OPENING.		DATE OF CLOSING.		NUMBER OF DAYS CANAL WAS IN FLOW.		REMARKS.
	1919.	1918.	1919.	1918.	1919.	1918.	
Katora ...	Afternoon, 9-5-19.	Afternoon, 7-5-18.	Afternoon, 30-9-19.	Afternoon, 30-9-18.	143	144	
Khanwah ...	11-5-19.	19-5-18.	11-10-19.	18-9-18.	142	105	
Upper Sohag ...	4-5-19. Forenoon.	6-5-18.	16-11-19.	1-12-18.	190	208	
Lower Sohag ...	8-5-19. Forenoon.	1-5-18.	30-9-19.	1-10-18.	143	155	

(b) The river supply during the months of May, June and July was high and the canals were drawing their full shares, thereby benefiting the crops considerably. There was no trouble this year with the heads as was experienced last year owing to the erosion. The river supply fell in November 1919. There were no high floods in the river. In fact, the supply in the river was sufficient throughout the season. It was a favourable year for the Inundation canals, and the area under *rabi* crops was comparatively large.

SIDHNAI CANAL, INCLUDING KORANGA, FAZILSHAH AND ABDUL HAKIM SUBSIDIARY CANALS.

(SUPERINTENDING ENGINEER—MR. J. W. GILLMON.)

The expenditure (direct and indirect) amounted to Rs. 2,305. Of this a sum of Rs. 129 was incurred on aligning and demarcating drainage on Tulamba distributary, while the suspense account was debited with Rs. 2,176 on account of stock transactions.

2. An expenditure of Rs. 4,985 against Rs. 8,838 in the preceding year was incurred on constructing Zilladar's office and peons' quarters at Headworks, Subordinates' quarters at Rashida, remodelling Rukanwala Minor and Kabirwala distributary and Minor No. 2 Makhdam Rashid and Venoi distributary, Sidhnai.

3. The expenditure amounted to Rs. 58,541 against Rs. 40,435 of the preceding year. Apart from the usual ordinary annual maintenance of works, the following were carried out :— Repairs to downstream talus of bays 21-27 Sidhnai Dam; extending pitching below head regulator Sidhnai; berm trimming Sidhnai Canal; berm cutting and strengthening banks minor No. 2; Kukarhatta distributary, Sidhnai Canal; special repairs to downstream pitching of Raipur Minor, Sidhnai, and providing needles for Sidhnai Dam.

4. The total rainfall at Kabirwala was 7.98 inches (6.23 inches in *kharif* and 1.75 inches in *rabi*) against an average of 6.46 inches.

The canals worked fairly well during the *kharif* season, while during the *rabi* season the Sidhnai canal was so favourably circumstanced in that it ceased to flow only on the 4th December 1919.

During the rest of the *rabi* season there was always enough water in the river to run one or two channels in rotation and this had a good effect on the extent and yield of the wheat crop.

Area irrigated—
Kharif 1919.
Rabi 1919-20.

5. The following table compares the irrigation effected on the whole system with the figures of the year 1918-19 and the average of the two previous triennia :—

CROP.	AVERAGE OF 3 YEARS ENDING		AREA-IRRIGATED DURING.	
	1915-16.	1918-19.	1918-19.	1919-20
	Acres.	Acres.	Acres	Acres.
Kharif/	127,387	122,451	121,212	130,749
Rabi	158,118	159,681	108,185	144,037
Total	285,505	282,132	229,397	283,786

The failed area in *kharif* amounted to 20,745 acres, or 14·84 per cent. of the total area irrigated, against 21·15 per cent. of the previous year. During *rabi* 20,802 acres or 14·4 per cent. of the total area irrigated were remitted against 9·21 per cent. in 1918-19.

6. The total income from all sources amounted to Rs. 6,56,792 against Rs. 8,11,923 in the preceding year. Working expenses amounted to Rs. 1,22,874 against Rs. 95,788 in 1918-19. The net income was, therefore, Rs. 5,33,918, or 40·05 per cent. on the capital outlay against Rs. 7,16,135, or 53·82 per cent. on the capital outlay in the preceding year. The falling off is attributable to a deficiency of about 61,000 acres in the area irrigated during the crops, the assessment of which was recovered during the year.

The uncollected balance of the assessment of occupiers' rates amounted to Rs. 269.

7. The canal had a better supply during the *rabi* season than was the case in the previous year; more wheat was sown, but even so foodstuffs remained dear and fodder scarce.

The rainfall during January and February 1920 was helpful to the standing crops, but some damage was done by hail to the standing crop in 4 villages in the Headworks Sub-Division.

No new works of any magnitude were undertaken.

INDUS INUNDATION CANALS.

(SUPERINTENDING ENGINEER—MR. J. W. GILLMON.)

1. The expenditure (direct and indirect) amounted to Rs. 3,118, as compared with Rs. 992 during the preceding year. It was mainly incurred under the sub-head "Suspense."

Capital Account—
Kharif 1919.
Rabi 1919-20.

2. A sum of Rs. 19,223 was spent, as compared with Rs. 25,713 in the preceding year. The following were the more important works carried out:—Groynes for the Sahiban and Dhundi Kutab Canals; pacca outlets from head to R. D. 7,000 Sohan Branch; Legghari ring bund; Hairo Groyne; flood embankment along X. Y. 1919; and additions and alterations to certain outlets of the Kadra canal.

Extensions and improvements.

3. The expenditure amounted to Rs. 1,37,526 against Rs. 1,23,612 in the previous year. In addition to ordinary maintenance and repairs, silt clearances of canals, strengthening of certain flood embankments, closing breaches and cuts caused by hill torrents and other miscellaneous works were carried out.

4. The average rainfall during *khariif* was 3.14 inches and during *rabi* 1.16 inches against 1.90 and 1.25 inches during the previous year, and average of 4.09 inches and 1.57 inches, respectively, during the last 24 years. The river Indus rose sufficiently high for timely opening of the canals during May 1919, and this state continued good to end of August after which it fell and consequently all canals, except Sahiban, Nur Dhundi, Dhundi Kutab and Kadra had to be closed during September 1919. All the canals ran with good supplies. The following table shows the period during which canals were in flow :—

NAME OF CANAL.	Date of opening.	Date of closing	No. of days canal was in flow.
Massuwah	25th May 1919	11th September 1919.	109
Fazalwah	13th May 1919	25th September 1919	108
Manka	10th May 1919	10th September 1919.	123
Shoria	10th May 1919	21th September 1919.	128
Kasturi	10th May 1919	10th September 1919.	109
Dhingana	12th May 1919	26th September 1919.	137
Chibri	12th May 1919	26th September 1919.	131
Sahiban	17th April 1919	4th October 1919	170
Gamun	16th April 1919	11th September 1919.	148
Nur Dhundi	1st April 1919	20th October 1919.	202
Dhundi Kutab	2nd May 1919	11th October 1919.	102
Kadra	2nd May 1919	19th October 1919.	170

5. The following table gives the area irrigated during the year with the averages of the previous two triennia and the figures of 1918-19 :—

SEASON.	AVERAGE OF 3 YEARS ENDING		AREA IRRIGATED DURING.	
	1915-16.	1918-19.	1918-19.	1919-20.
<i>Khariif</i>	Aores. 158,782	Aores. 147,042	Aores. 121,144	Aores. 166,489
<i>Rabi</i>	76,297	69,781	59,952	73,154
Total	235,079	216,823	181,097	239,643

The increase in irrigation is due to timely rainfall. The total area remitted amounted to 40,674 during *kharif* and 15,505 during *rabi*. It was mostly due to bad soil, insects and frost. On certain channels there are large tracts in which the soil is poor and requires a great deal of labour to be expended on it, which the Biloch cultivator has neither the inclination nor the energy to supply.

6. The total income from all sources was Rs. 5,32,760 against Rs. 4,29,790 in 1918-19 and the total expenditure under all heads amounted to Rs. 3,10,457 against Rs. 2,70,886. The net profit was, therefore, Rs. 2,22,303 (a percentage of 7.46 on the capital outlay) against Rs. 1,53,904, or 5.32 per cent. in the preceding year.

Financial results based on collections—
Rabi 1918-19.
Kharif 1919.

The uncollected balance of assessment of Occupier's rate was Rs. 66,407.

7. The year, on the whole, was satisfactory. It was remarkable principally for the high river and severe floods in hill torrents the construction of which did considerable damage during July 1919. The Attock gauge rose to 43.0 feet and nearly all the hill torrents were in spate throughout the length of about 200 miles extending from Massuwah canal to the tail of the Kadra canal. The Dau Sikhani Bund was breached in six places simultaneously owing firstly to heading up of river water on its east side, due to the main stream having shifted, and secondly owing to hill torrent water spilling over the country on its west side and cutting its way through the river. Flooding from the canal and from the Vidore torrent extended right down to Dera Ghazi Khan, a reach of 26 miles, and both the Gajjani distributary and the Fazalwah canal were crossed by hill torrent floods in several places, while the Manka canal had to be cut to prevent damage to Dera Ghazi Khan town. Lower down hill torrents breached the Nur Dhundi, Kutab and Kadra canals.

General remarks.

Minor Irrigation Works.

SHAHPUR IMPERIAL INUNDATION CANALS.

SUPERINTENDING ENGINEER—MR. W. P. SANGSTER.

1. No expenditure was incurred during the year.

Capital account—
Kharif 1919.
Rabi 1919-20.

2. Expenditure amounting to Rs. 1,648 was incurred on minor works only.

Extensions and improvements.

3. Expenditure to the extent of Rs. 27,296 was incurred on ordinary maintenance and repairs and on silt clearances.

Maintenance and repairs.

4. The rainfall was 15.3 inches (*kharif* 11.5 inches and *rabi* 3.8 inches) against 9.1 inches in the previous year. Of the *kharif* rainfall 0.9 inch fell in April, 0.84 inch in May, 2.44 inches in July, 6.13 inches in August, and 1.14 inches in September. There was no rain during June 1919. During *rabi* the months of October and November were quite rainless, and the showers in December to March aggregated 3.82 inches. The fairly good rainfall during *kharif* and the good supply in the river resulted in an increase in irrigation. The canals were opened early in April and closed early in September.

Nature of seasons and state of demand and supply—
Kharif 1919.
Rabi 1919-20.

5. The areas irrigated compare as follows with those of the two previous triennia :—

Area irrigated—
Kharif 1919.
Rabi 1919-20.

SEASON.	AVERAGE FOR 3 YEARS ENDING		ACTUAL FOR	
	1915-16.	1918-19.	1918-19.	1919-20.
	Acres	Acres.	Acres.	Acres.
Kharif	15,830	14,385	5,825	25,101
Rabi	23,420	20,991	10,902	20,708
Total	33,750	35,376	16,727	45,809

The area successfully matured and assessed was 44,622 acres as against 32,177 acres, the average of the previous triennium. The increase was due to favourable conditions in the river and to the rainfall. Revenue was remitted on 1,187 acres, the crops on which failed to mature, *viz.*, 300 acres by reason of bad germination, 247 acres through defect in soil, and 600 acres through miscellaneous causes.

6. The gross revenue realised amounted to Rs. 86,072 and working expenses to Rs. 77,184, leaving a net revenue of Rs. 8,888, which is equivalent to a return of Rs. 3.95 per cent. on the capital outlay to date. Details compare as follows with the average for the preceding triennium :—

Financial results based on collections—
Rabi 1918-19.
Kharif 1919.

DETAILS.				Average for the previous 3 years ending 1918-19.	Actual for 1919-20.
				Rs.	Rs.
Receipts, Direct ... ..	...	...	...	79,004	67,184
Do., Indirect ... ..	...	...	...	31,896	18,988
Total ... ..			...	1,10,900	86,072
Working expenses ... ..	...	...	...	57,228	77,184
Net Revenue ... ..			...	53,672	8,888
Percentage of net revenue on capital on Rs. 2,25,021				23.85	3.95

The decrease in the net revenue was due to a decrease in the area irrigated and larger remission during *rabi* 1918-19 due to unfavourable rainfall and inadequate river supply, as also, to a larger expenditure under working expenses due largely to enhanced cost of labour and material.

GHAGGAR CANALS.

(SUPERINTENDING ENGINEER,—MR. J. B. G. SMITH.)

The net expenditure amounted to a credit of Rs. 520 to the Imperial and to a debit of Rs. 445 to the Contribution Accounts, bringing the total outlay to date to Rs. 3,78,777 Imperial and Rs. 2,86,631 Contribution.

2. Expenditure amounted to Rs. 7,561 (Imperial Rs. 4,986 and Contribution Rs. 2,575) and was incurred on extending the downstream glacis of the Otu weir and completing outlets in the Low Level Minor.

3. Expenditure amounted to Rs. 8,188 (Imperial Rs. 6,398 and Contribution Rs. 1,785). In addition a sum of Rs. 2,448 was spent by the Bikaner State.

These sums met the bare necessities of ordinary maintenance.

4. *Kharif*—The rainfall in the tract served by these canals was negligible before the middle of July when the monsoon broke. Subsequently good rain fell, the total for the *kharif* being slightly above the average for the preceding 20 years in British area, and slightly below in the Bikaner State area. The rainfall in the *rabi* compared similarly in the two areas, respectively, with their 20 years' averages.

The Ghaggar supply first reached the Otu weir on July 15th, but it was not sufficient to run the Canals till July 20th. Supplies were then good for approximately one month. Indents were met and surplus passed below the weir till August 16th. From this date the supplies diminished steadily and ceased altogether by the end of September.

Rabi.—Useful rain fell in December and January, which benefited the standing crops.

5. The following table shows the area irrigated in British and Bikaner Territories during the last 5 years ending 1919-20. The area in British territory includes area assessed by the Civil Department:—

Crops.	1915-16.			1916-17.			1917-18.			1918-19.			1919-20.		
	British.	Bikaner.	Total.	British.	Bikaner.	Total.	British.	Bikaner.	Total.	British.	Bikaner.	Total.	British.	Bikaner.	Total.
	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.	Acre.
<i>Kharif</i> ..	4,218	12	4,230	10,237	3,234	13,471	9,693	1,677	11,370	1,981	100	2,070	7,293	1,276	8,569
<i>Rabi</i> ...	17,788	3,166	20,954	18,000	8,708	26,708	12,220	6,691	18,911	9,608	1,212	10,760	7,059	2,272	9,331
Total ...	22,006	3,178	25,184	28,237	11,942	40,179	21,913	8,368	30,281	11,589	1,312	12,901	14,352	3,548	17,900
Total number of days canal was in flow.	Northern Ghaggar Canal.		60	...	...	93	...	...	123	...	...	62	...	...	73
	Southern Ghaggar Canal.		58	...	...	93	...	...	122	...	...	38	...	...	65

The figures in the above table do not include the area under "Palever."

The amount of Occupiers' rates assessed was Rs. 2,288 in *kharif* and Rs. 6,078 in *rabi* and the rate per acre assessed works out to Rs. 5.72 and Rs. 2.52, respectively.

6. *Imperial*.—The operations of the year resulted in a loss of Rs. 28,817, which is equivalent to 7.61 per cent. on the Capital outlay compared with a loss of Rs. 8,514 equivalent to 2.24 per cent. in the previous year.

Financial results based on collections—
Rabi 1918-19,
Kharif 1919.

This high percentage of loss is due to two causes—(i) the comparatively low *rabi* area of 1918-19, the assessment of which was collected during the year, and (ii) an adjustment in the year's account of establishment charges due to an erroneous charge made during the previous year, the figures under this head are :—

					Rs.
1918-19	...	...	...	...	10,661
1919-20	...	...	...	...	20,590

7. The agricultural conditions were satisfactory enough, but the early withdrawal of the monsoon, with the consequent shrinkage of the river, necessitated a comparatively large area of *kharif* remissions (the main crop being rice) and resulted in a contracted area under *rabi* sowings.

The Ghaggar Canals, constructed as a productive work, are financially a failure and will continue to be so, as long as the basis of assessments remains as it does at present. The canals are virtually a protective work of value and the basis of assessment is now under re-examination with the officer-in-charge of the current Revenue Settlement of this tract.

8. The following statement of irrigation has been supplied by the State :—

Working of the Ghaggar Canals in the Bikaner State.

CANALS.		1918-19.			1919-20.		
		<i>Kharif.</i>	<i>Rabi.</i>	Total.	<i>Kharif.</i>	<i>Rabi.</i>	Total.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Northern Canal	...	66	819	885	1,183	1,793	2,976
Southern Canal	...	40	423	463	93	479	572
Total	...	106	1,242	1,348	1,276	2,272	3,548
Flow	...	106	1,242	1,348	1,276	2,272	3,548
Lift	...	...	...	...	...	...	...
Total as above	...	106	1,242	1,348	1,276	2,272	3,548

The following table gives the financial results of the canals in the Bikaner State as supplied by the State officials.

Particulars.					1918-19.	1919-20.
					Rs.	Rs.
<i>Receipts</i>						
Water rate	...	...	...	...	2,003	7,182
Miscellaneous	...	...	...	...	291	393
Total	...	...	...	...	2,294	7,580
<i>Working expenses.</i>						
Establishment	...	...	...	...	2,944	2,814
Other expenses	...	...	...	...	5,575	2,484
Total	...	...	...	...	8,519	5,298
Profit or loss net	...	...	...	...	-6,225	2,282

On the basis of these figures the Bikaner State derived a small profit of Rs. 0.80 per cent. on the working of the Canals for the year on the Contribution Capital Account of Rs. 2,86,631 to date.

LOWER SUTLEJ INUNDATION CANALS.

(SUPERINTENDING ENGINEER—MR. J. W. GILLMON).

1. No Capital account is kept for these Canals which are classed under "43—Minor Works and Navigation."

Capital Account—
Kharif, 1919.
Rabi, 1919-20.

2. The expenditure amounted to Rs. 1,56,473, against Rs. 1,05,050 in the preceding year. The more important works undertaken were: A diversion, a head regulator, an escape and one wooden bridge for the Mailsi Canal; flood embankment between the Mailsi Canal and Ghulamwah private canal, together with watercourses for irrigating the intercepted tract, a gauge readers and beldar's hut at the new head regulator, Mailsi Canal, a new diversion of the Muhammadwah canal and bridges on Sheikhwah Sharqia minor of Sardarwah Branch.

3. The expenditure amounted to Rs. 1,02,786, against Rs. 86,510 in the previous year, and was incurred on ordinary maintenance of channels and buildings, silt clearance and widening and remodelling of certain canals, etc.

4. The total rainfall during *kharif* was 4.81 inches in Tahsil Lodhran and 7.30 inches in Tahsil Mailsi, against an average of 4.4 inches and 5.1 inches, respectively. During *rabi* it was 1.31 inches in Tahsil Lodhran and 1.42 inches in Tahsil Mailsi, against the average of 1.27 inches and 1.09 inches, respectively.

The supply in the river was low in the beginning and demand keen, later the former increased and with abundant rainfall, demand got slack; canals worked efficiently throughout with very good results.

The following statement gives the dates of opening and closing of the canals during the year :—

Name of canal.	DATES OF		Number of days canal was in flow.
	Opening.	Closing.	
Hajiwah ...	20th May 1919 ...	6th October 1919 ...	136.
Mailsi ...	10th May 1919 ...	25th November 1919 ...	190.
Mohammadwah ...	1st May 1919 ...	1st November 1919 ...	179
Buhawalwah-Lodhran	11th May 1919 ...	17th October 1919 ...	146

The heads of all the canals worked very well throughout, with the exception of that of the Muhammadwah canal which, owing to heavy river erosion, was cut away in September. The canal was then fed direct from the main stream of the river and good supplies were maintained up to the end of the season.

5. The following table compares the area irrigated and matured during the year with the figures of 1918-19 and the averages of the two preceding triennia:—

SEASON.	Canal.	AVERAGE FOR 3 YEARS ENDING				AREA IRRIGATED DURING.			
		1915-18.		1918-19.		1918-19.		1919-20.	
		Irrigated.	Matured.	Irrigated.	Matured.	Irrigated.	Matured.	Irrigated.	Matured.
		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Kharif	Hajiwah	16,380	18,375	12,022	6,981	4,655	1,600	13,571	10,301
	Sutlej series	125,681	107,924	123,938	98,741	92,329	58,608	131,231	98,859
	Total	142,071	121,299	135,960	100,723	96,984	59,608	145,102	109,250
Rabi	Hajiwah	25,205	23,978	28,514	20,110	11,879	11,044	19,781	14,401
	Sutlej series	146,250	89,696	146,854	135,142	81,053	74,628	130,669	120,913
	Total	171,515	163,674	170,868	155,252	92,932	85,672	156,450	137,434
GRAND TOTAL		313,586	284,973	306,828	255,974	189,916	145,280	301,552	246,684

The failed area amounted to 54,871 acres (35,852 acres in *kharif* and 19,019 acres in *rabi*), against 44,636 acres (37,376 during *kharif* and 7,260 in *rabi*), in the preceding year. The total area irrigated and matured showed an improvement over the figures of the preceding year.

6. The total income from all sources was Rs 4,64,292 against Rs. 5,36,639 in 1918-19, and the total expenditure Rs. 4,38,525 against Rs. 3,44,927 in the preceding year. The net revenue amounted to Rs. 25,767 against Rs. 1,91,712 in 1918-19. The decrease was due to (a) a decrease in the area irrigated and matured during the *rabi* season of 1918-19, the assessment of which was collected during the year; and (b) an increase of expenditure under working expenses.

The uncollected balance of assessment of occupier's rate amounted to Rs. 964.

7. The year was characterised by very favourable agricultural results. The canals, although poorly supplied in the early part of the crop owing to the low river, ran at their utmost capacity in the middle of the season and met all demand throughout. The Mailsi Canal was opened through part of the new head diversion and worked satisfactorily up to the end of November. The only mishap was the cutting away by river of a part of the head reach of the Muhammadwah canal, as already mentioned.

The only new work of importance undertaken was the head diversion of the Muhammadwah canal necessitated by the river erosion of the head reach. This was practically complete by the end of the working season so that timely opening of the canal for the season of 1920 was possible.

No new works of any importance are contemplated at present. There were no floods of any appreciable magnitude in the river during the season, and the supply in canals was steadily maintained throughout.

CHENAB INUNDATION CANALS.

(SUPERINTENDING ENGINEER—MR. J. W. GILLMOŃ.)

Capital Account—
Kharif 1919.
Rabi 1919-20.

1. There is no capital account for these canals. They are classified under "43—Minor Works and Navigation."

2. The expenditure of Rs. 2,593, against Rs. 6,884 in 1918-19, was incurred on:—remodelling Bosan regulator, Durana Langana Canal; constructing Harvey Type outlet at R. D. 100,965, Wali Mohammad Canal; extending well measurement

Extensions and improvements.

lines to the river and to the main drainage lines; constructing timber bridge at R. D. 34,000 Lar Kamandhi canal; raising the bridge at R. D. 45,000 of Panjani distributary, Gajjuhatta Canal; and putting in pipe outlets on the Shahpur and Lar Kamandhi Canals.

3. The expenditure was Rs. 77,917, against Rs. 88,861 in the preceding year. It was incurred on silt clearances of the canals, and on repairing and strengthening bunds and banks, etc., etc.

4. The rainfall during *khariif* was 7.36 inches in Multan Tahsil and 5.5 inches in Shujabad Tahsil, against the average of 5.1 inches and 4.5 inches, respectively.

Nature of seasons and state of demand and supply—
Khariif 1919,
Rabi 1918-20.

During *rabi* it was 2.0 inches in Multan and 1.7 inches in Shujabad Tahsil, against an average of 1.5 inches and 1.2 inches, respectively.

The river Chenab rose sufficiently high in the beginning of the flow season to admit of most of the canals being opened in time, but towards the end of the season it was not as good as usual. On the whole, the river supplies were timely and generally sufficient to run the canals with full supplies.

The following statement gives the dates of opening and closing of canals :—

NAME OF CANAL.	DATES OF		No. of days canal was in flow.
	Opening.	Closing.	
Mattithal	16th May 1919 ...	12th September 1919.	119
Durana Langana	30th April 1919	19th September 1919.	137
Wali Muhammad	30th April 1919	19th September 1919.	137
Sikandarabad	12th May 1919	28th September 1919.	128
Gajjuhatta	12th May 1919	28th September 1919.	138
Balochanwah	12th May 1919	14th September 1919.	125

Area irrigated—
Khariif 1919,
Rabi 1918-20.

5. The following table compares the area irrigated during 1919-20, with the figures of 1918-19, and the averages of the two previous triennia :—

Crop.	AVERAGE OF 3 YEARS.		AREA IRRIGATED DURING	
	1915-16.	1918-19.	1918-19.	1919-20.
	Acres.	Acres.	Acres.	Acres.
<i>Khariif</i>	95,080	89,102	76,487	91,687
<i>Rabi</i>	100,567	97,752	50,142	90,980
Total	195,608	186,915	126,629	182,676

The area which failed to mature and on which remissions were granted was 23,145 acres, or 25.24 per cent. of the total area irrigated during *khariif* and 7,585, or 8.34 per cent. during *rabi*.

During *kharif*, bad soil and flooding were the chief causes of these high percentages of remission. Under short supply only 1,752 acres, or 1.91 per cent. of the total area irrigated, were remitted.

Of the 7,585 acres remitted during *rabi* 4,645 acres were accounted for by bad soil and 2,638 acres by frost.

6. The total income from all sources was Rs. 3,66,357 against Rs. 4,77,638 in 1918-19 and the total expenditure under all heads was Rs. 1,77,008, against Rs. 1,75,527 in the preceding year. The net income was, therefore, Rs. 1,89,349 against Rs. 3,02,111 in the preceding year.

The uncollected balance of the assessment of occupiers' rates amounted to Rs. 1,805.

General remarks.

7. The working of the canals, on the whole, was satisfactory.

Silt clearance is getting more difficult every year owing to the difficulty of getting sufficient local labour to undertake the work.

River discharges were observed at Haveli and Shershah in connection with the preparation of a project for the construction of a weir controlled canal to feed the present inundation canals.

Very little work was done on extension and improvements and the maintenance work itself is very superficial.

No new work of any magnitude is at present contemplated.

MUZAFFARGARH INUNDATION CANALS.

(SUPERINTENDING ENGINEER—MR. J. W. GILLMON).

Capital Account—
Kharif 1919.
Rabi 1919-20.

1. No Capital Account is kept for these canals. They are classified under "13--Minor Works and Navigation" and "Agricultural."

2. The expenditure was Rs. 18,665, against Rs. 21,764 in the previous year. It was incurred chiefly in constructing a few bridges and tail outlet clusters, and in extending the Pura escape.

Extensions and improvements.

In addition to the above Rs. 3,283, against Rs. 1,752 during the previous year, were spent from the agricultural funds on the construction of a pucca well in the compound of Rohillanwala rest-house and a subordinate rest-house at Sanawan.

3. The expenditure amounted to Rs. 1,89,346, as compared with Rs. 1,65,326 during the previous year and was incurred on ordinary silt clearance of channels and such works as repairing breaches, strengthening and raising banks and bunds, repairing-regulators and excavating new head reaches of certain canals, etc., etc.

Maintenance and repairs

In addition to the above Rs. 17,626, against Rs. 25,135 in 1918-19, were spent from the agricultural funds for maintenance and special repairs of rest-houses and flood bunds.

4. The monsoon broke rather early, both the Chenab and the Indus rivers rose sufficiently high in the beginning of the flow season to admit of the canals being opened in good time. Both rivers remained high from June to August, and consequently the supply in the canals was good during the period when the demand was keen.

Nature of season and state of demand and supply—
Kharif 1919.
Rabi, 1919-20.

The rainfall also, although scanty, was quite opportune and contributed largely towards the maturing of the crops.

In September, however, towards the end of the flow season the rivers fell very rapidly, but most of the canals obtained sufficient water to enable the people to sow and mature their *kharif* crops and to flush their lands for *rabi* sowings, all that Inundation canals can be expected to do.

Of the Chenab series the heads of the Karam and the Taliri Canals which failed last year, were carried considerably higher up. These canals, therefore, obtained good supplies of water and the areas irrigated by them show considerable improvement over last year.

Of the Indus Series, the Ghuttu and the Puran Canals remained in flow during the cold weather of 1918-19, which enabled some of the *kharif* crops of 1919, like indigo and cotton, to be sown in good time. The Magassan canal, which was comparatively poorly supplied in the previous year, gave a good supply this year owing to its head having been taken higher up. The Maggi canal unfortunately failed towards the end of the flow season, while the supply in the Suleman canal was somewhat deficient at the end of the season. All the other canals did very well and the flow season was, therefore, a remarkably good one, free from any complaints of short supply.

This year the Kot Sultan and the Magassan canals kept flowing up to the end of December and October 1919, respectively. Though the supply was not abundant, it was quite equal to the demand and helped considerably to mitigate acute distress in the Kot Adu Sub-Division due to large mortality among the cattle on account of a widespread epidemic.

The following statement gives the periods during which canals were in flow :—

Name of Canal.	DATE OF		Number of days canal was in flow.				
	Opening.	Closing.					
<i>Indus Series.</i>							
Kot Sultan	5th May 1919	...	1st January 1920	...	241
Magassan	6th May 1919	...	31st October 1919	...	179
Maggi	5th May 1919	...	10th October 1919	...	163
Ghuttu	1st April 1919	...	20th October 1919	...	213
Puran	1st April 1919	...	10th November 1919		224
Suleman	9th May 1919	...	20th October 1919	...	165
<i>Chenab Series.</i>							
Karam	4th June 1919	...	12th September 1919		101
Ganesh	15th May 1919	...	26th September 1919		134
Taliri	8th May 1919	...	18th September 1919		133

Area irrigated—
Kharif 1919.
Rabi 1919-20.

5. The following statement compares the areas irrigated during 1919-20, with the averages of the previous two triennia and the figures of 1918-19 :—

Crop.	AVERAGE FOR 3 YEARS ENDING		AREA IRRIGATED DURING	
	1915-16.	1918-19.	1918-19.	1919-20.
	Acres.	Acres.	Acres.	Acres.
<i>Kharif</i>	149,332	150,659	121,739	159,348
<i>Rabi</i>	227,927	218,373	186,824	205,007
Total	377,259	369,032	308,563	364,355

The area irrigated was practically the same as the average of the triennium ending 1918-19, but in excess of that of 1918-19, which was due to good supply in the canals and the timely rainfall. But for the early fall in the water surface of the rivers and unfortunate failing of the Maggi canal in the middle of October, irrigation figures for the year under review would have compared favourably with the best of the preceding years.

6. The total revenue collected amounted to Rs. 6,86,677, against Rs. 6,39,841 and the working expenses to Rs. 3,39,544, against Rs. 3,41,092. The net revenue amounted to Rs. 3,47,133, against Rs. 2,98,749 in the preceding year.

The uncollected balance of assessment of Occupier's rate amounted to Rs. 5,094, against Rs. 10,945 of the last year.

7. From an irrigation point of view the year under report was a favourable one, the canals yielding abundant supply at the time of keen demand, and rain falling when most needed.

General remarks. With a view to relieve distress due to a widespread epidemic among the cattle, the Kot Sultan and the Magassan canals, which had favourable heads, were allowed to run up to the end of December and October 1919, respectively, and did a lot of good.

The work of constructing an upper head for the Taliri canal commenced in 1918-19 was completed this year.

A permanent gauge was erected this year at Panjnad (meaning 5 streams) below the junction of the Chenab and the Sutlej and daily discharge observations of the water available are being made.

A large number of channels were completely overhauled and put in a state of thorough repair during the year.

The only work of any magnitude undertaken during the year was the extension of the Puran Escape, the left bank of which forms a flood bund and is meant to protect a considerable area from the ravages of the floods from the Indus.

The year was particularly free from any epidemic of influenza or malaria.

SHAHPUR PROVINCIAL INUNDATION CANALS.

(SUPERINTENDING ENGINEER—MR. W. P. SANGSTER, C.I.E.)

Capital Account—
Kharif 1919.
Rabi 1919-20.

1. No capital account is kept for these canals.

Extensions and improvements.

2. An expenditure of Rs. 5,333 was incurred on minor works only.

3. Expenditure to the extent of Rs. 13,770 was incurred on the usual maintenance and repairs and on silt clearances, as against Rs. 15,926 in 1918-19.

Nature of seasons and state of demand and supply.

4. The rainfall during the year was 15.2 inches (kharif 11.4 inches and rabi 3.8 inches), against 9.1 inches in the previous year.

Of the kharif rainfall 0.9 inch fell in April, 0.8 inch in May, 2.4 inches in July, 6.1 inches in August and 1.1 inch in September.

The month of June was rainless. During the rabi season there was no rain during October and November, and the showers in December, January, February and March aggregated 3.8 inches only.

The canals were opened early in April. The flow of the river was, on the whole, favourable and the canals worked satisfactorily during the year.

The dates of opening and closing of the canals were as follows :—

	<i>Date of opening.</i>	<i>Date of closing.</i>
Raniwah Canal ...	1st April 1919	13th August 1919.
Corbynwah Canal ...	8th April 1919	3rd September 1919.

Both the Raniwah and Corbynwah canals were opened fully one month in advance of the usual date, but the former ceased to flow a fortnight earlier than usual, while the latter was closed 2 days later than the usual date.

5. The area irrigated compares as follows with the averages of the two preceding triennia and the figures of 1918-19 :—

Season.			AVERAGE OF 3 YEARS ENDING		AREA IRRIGATED DURING	
			1915-16.	1918-19.	1918-19.	1919-20.
			Acres.	Acres.	Acres.	Acres.
<i>Kharif</i>	...	...	14,980	10,691	10,229	25,286
<i>Rabi</i>	...	...	11,788	12,533	2,954	9,767
Total	...	...	26,768	23,224	13,183	35,043

The area successfully matured and assessed was 34,175 acres, as against 22,580 acres of the preceding triennium. The increase is due to the favourable condition of the river and to the favourable rainfall.

Revenue was remitted on 868 acres, of which 740 acres failed to mature through excess of rainfall, 27 acres through defect of soil and 101 acres through miscellaneous causes.

Besides, 873 acres were also remitted under free grants.

6. The gross revenue realised amounted to Rs. 45,616. The revenue figures compare as follows with the average of the previous triennium :—

Details.			Average for 3 years ending 1918-19.	Year 1919-20.
			Rs.	Rs.
Total assessments (Direct and Indirect)	...	...	33,444	59,421
Receipts Direct and Indirect	...	...	51,837	45,616
Working expenses	...	...	44,745	51,327
Net Revenue	...	...	7,092	—5,711

There was a net loss of Rs. 5,711 on the year's working which was due to a decrease in the area irrigated during *rabi* 1918-19 and an increase in working expenses due largely to enhanced cost of labour and materials.

7. The Corbynwah is a small channel which irrigates principally pasture land, most of which is free from assessment.

General remarks.

SIMLA :—

F. W. WOODS,

The 1st October 1920.

Chief Engineer, Irrigation Works, Punjab.

GOVERNMENT OF THE PUNJAB.
PUBLIC WORKS DEPARTMENT.

IRRIGATION BRANCH.

Part II.

STATISTICAL STATEMENTS FOR THE YEAR 1919-20.

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STATEMENT OF CANALS

PARTICULARS	MAJOR IRRIGATION						
	Western Jumna Canal, including Sirsa Branch, British and Patiala.	SIRHIND CANAL.		Upper Bari Doab Canal.	Lower Bari Doab Canal.	Upper Chenab Canal.	Lower Chenab Canal.
		British.	Patiala, Nabha and Jind States.				
1	2	3	4	5	6	7	8
Source of supply	Jumna.	Satlej.		Ravi.	Ravi and Chenab.	Chenab.	Chenab.
Minimum discharge of river. { Error recorded, cubic feet per second.	2,167	2,710		1,272	60	3,884	3,834
During the year " "	2,800	2,532		1,862	204	5,029	250
As designed " "	6,178	8,840	2,100	5,040	6,750	11,742	8,813
Maximum discharge of canal. { Now authorised " "	6,480	5,491	3,080	6,750	6,750	11,674	10,730
During the year " "	5,937	8,530		6,750	6,349	12,010	10,403
Average annual rainfall Inches	(a) 17.95	(b) 17.17	(b) 18.65	(a) 24.47	(b) 10.14	(c) 22.3	(c) 18.45
Gross area commanded Acres	2,707,296	2,571,605	1,954,500	1,039,499	1,084,471	1,612,547	3,814,867
Culturable area commanded	2,324,407	2,276,140	1,629,000	1,504,059	1,379,951	1,531,947	2,580,808
Area proposed to be irrigated annually. { By complete project	593,565	761,511	420,000	1,083,760	877,508	645,367	1,500,000
{ At present	593,565	750,000	420,000	1,083,760	877,508	661,594	1,726,192
Sanctioned Estimate—							
Direct charges Rs.	1,05,54,269	2,29,18,999	1,41,67,175	1,57,23,535	2,10,69,910	3,61,31,593	2,53,94,175
Indirect charges	7,50,277	12,73,128	...	...	6,58,482	12,25,441	8,31,791
Interest during construction	34,27,795	67,03,020	...	...	34,29,917	71,07,563	66,50,277
Total Estimate	1,47,32,341	3,29,95,145	1,44,67,175	1,57,23,565	2,57,58,349	4,44,65,597	3,31,66,243
Expenditure to end of 1919-20 { Direct charges	1,81,47,209	2,45,49,880	1,31,34,100	2,15,37,190	2,22,75,306	3,45,55,333	3,18,93,672
{ Indirect charges	8,12,087	12,14,765	...	7,39,168	4,81,185	9,93,312	7,87,383
{ Interest during construction	32,06,964	65,45,401	...	1,64,97,088	39,00,649	83,09,216	61,52,313
Total Expenditure	2,21,66,260	3,43,10,046	1,34,34,100	3,57,73,396	2,96,57,540	4,38,58,866	3,91,33,353
Works as now sanctioned—							
Main Canals irrigation Miles	82	30		80	132	173	40
Branch Canals	218	279	219	294			887
Branch Feeder Canals ... ..	...	...	...	16	...	...	...
Lower Chantang Nala Canal	4	...	...	...	...	...	...
Distributaries, irrigation	1,845	1,595	1,810	1,545	1,192	1,182	2,243
Lower Chantang Nala Canal Distributaries	45	...	...	...	...	...	...
Of above—							
Navigable Channels	121	92	48	...	...	...	...
Works completed to end of 1919-20—							
Main Canals, irrigation	82	30		80	132	173	40
Branch Canals	218	279	219	294			887
Branch Feeder Canals ... ..	...	...	...	16	...	...	...
Lower Chantang Nala Canal	4	...	...	...	...	...	...
Distributaries, irrigation	1,845	1,595	1,810	1,545	1,180	1,178	2,243
Lower Chantang Nala Canal Distributaries	45	...	...	...	...	...	...
Of above—							
Navigable Channels	131	92	48	...	...	...	...

NOTE.—Miles shown in this statement

*Salampur and
†Includes 4 miles
(a) Average rainfall for the last 41 years
(b) Ditto ditto 86 do.
(c) Ditto ditto 80 do.
(d) Ditto ditto 18 do.
(e) Ditto ditto 13 do.

A.
IN THE PUNJAB.

WORKS.				MINOR IRRIGATION WORKS.							
Upper Jhelum Canal.	Lower Jhelum Canal.	Upper Sutlej Canal.	Sidnai Canals.	Indus Inundation Canals.	Shahpur (Imperial) Inundation Canals.	GHAGGAR INUNDATION CANALS.		Lower Sutlej Inundation Canals.	Chenab Inundation Canals.	Muzaffargarh Inundation Canals.	Shahpur (Provincial) Inundation Canals.
9	10	11	12	13	14	British.	Bikaner State.	17	18	19	20
Jhelum.	Jhelum.	Sutlej.	Ravi.	Indus.	Jhelum.	Ghaggar.		Sutlej.	Chenab.	Indus Chenab.	Jhelum.
4,514	Nil	3,051	The river runs dry.	9,489	Nil	...	...	2,580	808	9,439 808	Nil
6,032	80	4,368		27,540	60	...	...	3,878	2,894	...	80
8,500	3,800	4,935	2,120	...	1,100	1,000	500	5,555	5,163	7,534	938
...	4,102	...	2,315	...	1,100	1,410	550	...	...	...	932
8,328	4,089	10,501	3,121	6,617	1,124	1,29	320	5,974	4,253	10,552	1,087
28-58	(d) 13-59	(f) 10-49	(g) 7-01	(h) 5-62	(i) 14-75	(j) 11-20	(k) 12-52	(l) 5-71	(m) 5-31	(n) 5-55	(o) 14-08
592,052	1,312,374	989,730	800,877	270,108	67,077	86,324	44,104	918,209	453,473	771,311	60,928
552,450	1,251,900	1,09,836	314,169	422,023	62,054	72,078	34,618	905,152	360,833	774,932	53,255
316,306	660,000	319,007	150,000	305,700	47,750	46,581	17,300	250,000	200,000	350,000	27,000
316,306	523,000	629,184	150,000	305,700	47,750	46,581	17,300	250,000	200,000	350,000	24,170
4,32,40,282	1,53,95,752	13,86,378	9,62,383	6,87,808	2,05,933	3,59,882	2,07,865	...	...	...	...
10,56,277	5,08,200	46,400	37,082	19,729	9,891	10,129	...	...	...	...	...
73,20,746	32,93,554	...	39,088	...	...	...	...	...	...	...	...
5,16,17,805	2,22,62,742	13,52,778	10,89,501	7,07,835	2,15,914	3,09,720	3,07,865	...	...	...	...
4,88,07,507	1,05,02,559	17,17,332	12,92,750	28,09,244	2,14,000	3,07,921	2,86,681	...	...	...	...
9,11,513	4,22,030	1,01,041	40,229	80,884	10,831	10,853	...	...	...	...	...
85,23,443	58,03,774	8,57,000	2,12,511	6,86,207	...	...	...	...	...	...	...
5,30,42,403	2,73,48,023	27,05,403	15,45,400	30,64,835	2,25,021	3,78,777	2,86,681	...	...	...	...
189	30	328	68	442	50	44	53	403	256	421	37
40	208	...	...	...	12	...	...	...	...	...	18
...
...
036	998	384	255	301	72	34	...	287	61	725	52
...
...
189	39	828	68	442	50	44	53	403	256	421	37
40	156	...	...	...	12	...	...	...	...	...	18
...
...
681	995	304	255	301	68	34	...	287	61	725	52
...
...

are canal miles of 5,00 feet.
Faridnagar Channels,
for Bhimber diversion.
(f) Average rainfall for the last 27 years.
(g) Ditto ditto 31 do.
(h) Ditto ditto 58 do.
(i) Ditto ditto 21 do.
(j) Ditto ditto 17 do.
(k) Ditto ditto 10 do.

CAPITAL ACCOUNT OF THE IRRIGATION WORKS IN THE PUNJAB PROVINCE FOR AND TO
END OF 1919-20.

			DIRECT CHARGES (NET EXPENDITURE).					Indirect charges exclusive of interest.	Total charges exclusive of interest.	Simple interest.
			Works.	Establishment.	Tools and Plant.	Suspense.	Total.			
1	2	3	4	5	6	7	8	9		
42—CAPITAL EXPENDITURE IRRIGATION WORKS NOT CHARGED TO REVENUE.			Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
IMPERIAL.										
Western Canal including Sirsa Branch.	To end of previous year	...	1,31,23,099	33,23,358	2,17,874	2,36,873	1,09,01,694	8,10,083	1,77,11,680	2,46,33,517
	During the year	...	47,277	13,965	2,010	19,174	81,376	2,005	83,381	5,78,909
Birkhind Canal	To end of previous year	...	1,74,61,819	46,33,103	21,00,723	2,81,960	2,44,70,623	12,12,220	2,66,89,843	3,56,41,604
	During the year	...	31,031	16,120	178	22,008	73,355	2,538	76,893	9,38,636
Upper Bari Doab Canal.	To end of previous year	...	1,62,87,377	31,95,994	9,23,161	9,70,310	2,16,58,142	7,38,620	2,23,96,762	3,67,49,859
	During the year	...	12,455	3,914	463	-1,37,774	-1,20,032	543	-1,20,404	7,46,620
Lower Bari Doab Canal.	To end of previous year	...	1,69,51,477	31,67,679	10,60,741	7,10,712	2,31,70,812	4,78,587	2,36,49,400	54,23,437
	During the year	...	1,18,145	44,273	4,781	-82,708	1,01,401	8,109	1,10,692	7,77,515
Upper Chenab Canal.	To end of previous year	...	2,72,27,638	46,63,072	21,02,670	7,38,412	3,47,71,622	9,07,676	3,57,69,298	1,07,20,681
	During the year	...	-1,85,464	-29,020	-3,041	-48,620	2,16,331	-4,063	-2,20,417	11,68,917
Lower Chenab Canal.	To end of previous year	...	2,69,69,280	49,26,941	8,41,118	3,80,033	3,17,16,815	7,70,371	2,24,98,212	2,60,10,852
	During the year	...	1,57,703	67,232	-10,820	-27,340	1,58,817	8,012	1,61,829	10,59,511
Upper Jhelum Canal.	To end of previous year	...	3,35,00,690	50,73,653	46,13,415	8,09,768	4,40,67,621	9,18,428	4,40,94,973	1,16,73,335
	During the year	...	-3,61,646	-8,668	342	-87,011	-4,80,016	-039	-4,80,055	16,15,757
Lower Jhelum Canal.	To end of previous year	...	1,31,32,780	23,26,498	3,75,768	4,33,025	1,62,09,887	4,08,608	1,66,77,670	94,87,416
	During the year	...	2,22,850	85,011	7,033	-30,016	2,94,078	13,352	3,07,330	5,81,418
Upper Sutlej Irrigation Canals.	To end of previous year	...	13,70,095	2,05,106	24,087	16,277	1,71,255	1,01,011	18,12,396	23,42,495
	During the year	...	...	...	...	6,077	6,077	...	6,077	69,302
Siddhant Irrigation Canals.	To end of previous year	...	9,45,639	2,61,047	38,020	42,785	12,00,449	46,225	13,30,674	14,17,843
	During the year	...	80	28	...	2,170	2,301	4	2,305	43,921
Indus Irrigation Canals.	To end of previous year	...	23,69,104	4,50,023	25,080	60,003	29,01,360	80,385	29,81,745	22,97,067
	During the year	...	-43	-4	...	-3,000	-3,110	-1	-3,117	98,789
Total	To end of previous year	...	16,77,63,930	3,23,08,674	1,81,11,468	16,91,053	21,79,55,180	65,58,385	22,45,11,551	16,61,18,295
	During the year	...	73,307	1,92,870	930	-3,40,266	-82,150	27,632	54,458	75,19,495
CONTRIBUTION.										
Western Canal Branch.	To end of previous year	...	9,00,163	2,38,542	23,768	...	11,00,478	...	11,00,478	...
	During the year	...	2,175	934	42	...	3,751	...	3,751	...
Birkhind Canal	To end of previous year	...	97,40,810	33,71,812	12,01,614	...	1,43,22,436	103	1,43,22,539	...
	During the year	...	8,360	1,391	9	...	9,750	...	9,760	...
	During the year	...	890	145	1	...	1,026	...	1,026	...
	During the year	...	760	126	1	...	897	...	897	...
Total	To end of previous year	...	1,06,49,778	36,07,854	12,25,292	...	1,56,82,914	103	1,56,83,017	...
	During the year	...	12,776	2,656	53	...	15,414	...	15,414	...
43—MINOR WORKS AND NAVIGATION.										
Shahpur Canal	To end of previous year	...	1,91,006	32,768	660	...	2,14,690	10,341	2,25,031	...
	During the year	...	...	...	...	...	...	...	...	...
Ghaggar Imperial.	To end of previous year	...	2,96,042	63,608	7,957	...	3,69,407	10,890	3,79,297	...
	During the year	...	-205	-289	-9	...	-463	-37	-520	...
Ghaggar Contribution.	To end of previous year	...	2,36,210	44,433	2,643	...	2,86,186	...	2,86,186	...
	During the year	...	321	116	5	...	415	...	445	...
Total Imperial.	To end of previous year	...	4,78,008	60,200	8,623	...	5,53,097	21,221	5,64,318	...
	During the year	...	-203	-260	-9	...	-483	-37	-520	...
Total Contribution.	To end of previous year	...	2,36,210	44,433	2,643	...	2,86,186	...	2,86,186	...
	During the year	...	321	116	5	...	445	...	415	...
Jalalpur Canal	To end of previous year	...	28,679	19,321	8,004	...	81,001	2,706	83,707	...
	During the year	...	...	...	...	...	...	...	...	...

I. C.

**STATEMENT SHOWING THE FINANCIAL RESULTS OF THE IRRIGATION WORKS IN
THE PUNJAB PROVINCE FOR THE YEAR ENDING 31ST MARCH 1920.**

STATEMENT SHOWING THE FINANCIAL RESULTS OF IRRIGATION REALIZATIONS UNDER THE MAIN HEADS OF

IRRIGATION.	REVENUE (ACTUAL RECEIPTS).										
	IRRIGATION.										Gross receipts (less refunds).
	Water-rate directly paid.	Share of land revenue and sales proceeds of waste lands and other lands.	Owners' rates.	Total.	Navigation.	Plantation.	Water power.	Miscellaneous.	Total.	Refunds of revenue.	
1	2	3	4	5	6	7	8	9	10	11	12
PRODUCTIVE WORKS.											
IMPERIAL.											
Western Jumna Canal	Rs. 31,82,107	Rs. 1,83,599	Rs. ..	Rs. 33,65,706	Rs. 1,31,004	Rs. 10,837	Rs. 5,091	Rs. 54,033	Rs. 35,86,594	Rs. 463	Rs. 35,86,124
Sirhind Canal	39,40,593	1,25,183	..	40,75,776	18,002	41,000	1,41,177	81,763	43,83,038	2,170	43,80,868
Upper Bari Doab Canal	42,77,027	5,25,710	..	48,02,737	..	95,001	1,49,605	2,23,931	52,73,270	49,610	52,23,660
Lower Bari Doab Canal	26,58,844	17,85,203	..	44,44,047	..	3,393	..	1,08,430	45,63,682	1,480	45,62,202
Upper Chenab Canal	26,05,072	1,30,769	..	27,35,841	..	753	..	32,506	27,69,600	618	27,68,982
Lower Chenab Canal	90,31,705	77,01,500	..	1,67,33,205	200	30,824	10,620	73,630	1,48,57,460	14,247	1,48,43,213
Upper Jhelum Canal	11,73,064	..	..	11,73,064	..	1,019	..	49,405	12,15,389	5,669	12,09,720
Lower Jhelum Canal	27,55,003	14,57,537	..	42,12,540	..	11,132	30,006	29,332	42,93,019	301	42,92,718
Upper Sutlej Inundation Canals	5,23,207	2,05,201	..	7,28,408	..	4,667	..	11,620	7,44,093	635	7,43,458
Siddhant Inundation Canals	5,64,388	90,793	..	6,55,181	..	1,081	..	4,891	6,56,850	58	6,56,792
Indus Inundation Canals	1,61,681	2,93,223	..	4,54,904	..	4,131	..	73,761	5,32,786	20	5,32,766
Total	3,08,76,282	1,25,14,185	..	4,33,90,467	1,43,106	2,12,033	3,51,802	7,33,935	1,48,35,861	72,163	1,47,63,698
CONTRIBUTION.											
Western Jumna Canal	2,05,105	..	..	2,05,105	..	240	..	3,661	(a) 2,08,000	88	2,08,088
Sirhind Canal	21,14,726	..	..	21,14,726	10,011	24,770	43,601	45,403	25,39,593	2,365	(d) 25,37,228
Total	27,09,831	..	..	27,09,831	10,022	25,010	43,601	49,117	25,57,593	2,473	25,55,120
WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.											
CANALS IN OPERATION.											
Lower Sutlej Inundation Canals	2,34,781	2,26,210	..	4,60,991	..	2,279	..	2,042	4,84,293	..	4,84,293
Chenab Inundation Canals	1,56,535	1,93,691	..	3,50,226	..	11,000	..	3,442	3,64,667	310	3,64,357
Muzaffargarh Inundation Canals	2,83,016	3,93,831	..	6,76,847	..	4,032	..	3,072	6,80,874	197	6,80,677
Total	6,74,332	6,13,732	..	12,88,064	..	16,240	..	7,556	15,17,833	507	15,17,326
WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.											
Shahpur Canal	67,134	18,928	..	86,062	..	..	..	..	84,972	..	84,972
Ghaggar Canal	6,805	..	..	6,805	..	..	..	10	6,815	..	6,815
{ Imperial ... ..	..	..	..	..	..	..	..	..	..	..	..
{ Contribution	7,182	..	..	7,182	..	..	..	398	(f) 7,580	..	7,580
Total	73,939	18,928	..	92,867	..	..	..	10	92,877	..	92,877
{ Imperial ... ..	..	..	..	..	..	..	..	..	..	..	..
{ Contribution	7,182	..	..	7,182	..	..	..	398	7,580	..	7,580
PROVINCIAL.											
Shahpur Canal	35,691	9,325	..	45,016	..	..	..	..	45,016	..	45,016
Total	35,691	9,325	..	45,016	..	..	..	..	45,016	..	45,016

(a) Includes Rs. 731 credited to Patiala State through
(b) and (c) include Rs. 23,785 and Rs. 18,702, respectively,
(d) Includes Rs. 85,004 passed through the Administrative
(e) Includes Rs. 3,4,690, Rs. 85,110 and Rs. 30,337 spent
(f) These figures have been reported by the Bikaner State.
(g) Includes Rs. 2,414
(h) " " Rs. 2,448 spent by the Bikaner State.
(i) " " Rs. 34

Total 5,396

C.

WORKS IN THE PUNJAB PROVINCE FOR THE YEAR ENDING 31st MARCH 1920.
REVENUE AND WORKING EXPENSES.

MAINTENANCE OF WORKS.																			
ESTABLISHMENT REVENUE.					ESTABLISHMENT.				Works.	Repairs.	Sundries.	Tools and Plant.	Plantation.	Total cost of maintenance.	Total direct charges.	Indirect charges.	Gross Total Working Expenses.	Net Revenue.	
Direction.	Executive.	Navigation.	Civil Officers.	Total.	Direction.	Executive.	Medical.	Total.											
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
...	5,86,482	...	...	5,86,482	...	1,39,577	...	1,39,577	1,06,383	5,08,808	2,778	31,433	21,000	8,89,669	14,76,161	1,00,476	15,76,636	19,89,488
...	6,64,180	...	...	6,64,180	...	81,100	...	81,100	91,363	3,09,737	...	2,574	27,169	6,04,857	12,66,067	1,03,933	13,69,000	20,07,828
...	6,05,105	...	...	6,05,105	...	48,104	...	48,104	46,741	6,16,679	...	25,410	31,691	8,21,674	14,26,679	98,403	15,25,082	37,01,676
...	5,01,711	...	...	5,01,711	...	1,07,687	...	1,07,687	68,819	4,33,463	...	20,709	64,311	6,95,328	11,87,057	£5,303	12,82,370	32,79,796
...	6,43,015	...	...	6,43,015	...	71,978	...	71,978	79,131	5,12,178	3,020	24,146	40,231	7,53,760	13,77,705	1,00,609	14,78,314	12,00,471
...	11,28,620	...	...	11,28,620	...	1,02,424	...	1,02,424	1,29,720	6,05,975	211	—60,512	69,283	9,26,189	20,64,939	1,72,374	22,37,313	1,40,16,690
...	3,77,921	...	...	3,77,921	...	1,01,423	...	1,01,423	22,378	3,48,634	...	12,651	13,132	5,59,221	6,36,145	75,609	10,11,654	1,89,075
...	5,11,493	...	...	5,11,493	...	33,851	...	33,851	73,783	2,81,984	...	11,016	6,705	4,23,341	9,31,837	76,373	10,11,210	32,81,418
...	1,52,144	...	...	1,52,144	...	65,173	...	65,173	7,063	1,86,467	...	7,493	11,670	2,68,403	4,20,607	20,274	4,40,881	2,03,670
...	44,621	...	...	44,621	...	5,601	...	5,601	8,925	51,490	...	274	7,141	71,311	1,15,582	7,012	1,22,594	5,33,918
...	90,006	...	...	90,006	...	43,210	...	43,210	19,273	1,31,183	...	607	3,383	2,01,603	2,01,611	18,649	2,20,260	2,22,203
...	52,90,291	...	...	5,290,291	...	8,07,054	...	8,07,054	6,05,032	11,72,545	0,748	71,670	7,87,590	61,84,429	1,14,00,720	8,63,617	73,88,337	3,34,04,451
...	142	...	...	142	...	(b) 41,477	...	41,477	5,203	(c) 56,695	...	2,100	1,633	1,00,197	1,00,339	...	1,00,339	1,69,582
...	21,659	...	...	21,659	...	93,670	...	93,670	67,013	(e) 5,12,037	—1,367	218	3,267	6,65,747	6,67,385	...	6,67,385	18,40,183
...	21,730	...	...	21,730	...	1,35,166	...	1,35,166	63,206	5,70,702	—1,365	2,717	4,918	7,74,041	7,08,071	...	7,08,071	20,39,765
...	73,781	...	...	73,781	...	60,718	...	60,718	1,66,473	95,477	—4,708	1,006	7,309	8,42,271	4,10,765	22,470	4,38,625	25,767
...	66,319	...	...	66,319	...	19,665	...	19,665	2,693	70,471	...	312	7,416	90,677	1,65,106	11,612	1,77,008	1,89,349
...	50,160	...	...	50,160	...	60,601	...	60,601	18,605	1,78,137	—2,187	806	13,203	2,66,191	3,22,341	17,300	3,39,641	3,47,193
...	1,05,253	...	...	1,05,253	...	1,65,332	...	1,65,332	1,77,731	3,42,035	—6,693	2,123	27,064	7,02,512	9,03,575	51,482	9,55,057	5,62,749
...	22,253	...	...	22,253	...	19,222	...	19,222	1,618	27,206	...	913	...	40,070	71,373	5,912	77,184	8,698
...	13,993	...	...	13,993	...	6,607	...	6,607	4,038	6,254	...	465	141	18,468	32,460	2,893	35,341	—29,817
...	...	...	...	...	...	(g) 4,821	...	4,821	2,676	(h) 4,233	...	(j) 100	...	11,220	11,220	...	11,220	—3,649
...	30,280	...	...	30,280	...	23,810	...	23,810	6,011	33,550	...	1,398	141	67,615	1,03,831	8,691	1,12,525	—10,920
...	...	...	...	...	...	4,821	...	4,821	2,676	4,233	...	100	...	11,220	11,220	...	11,220	—3,649
...	13,302	...	...	13,302	...	14,310	...	14,310	5,513	13,770	...	910	...	31,053	47,416	3,882	51,327	—5,711
...	13,302	...	...	13,302	...	14,310	...	14,310	5,513	13,770	...	910	...	31,053	47,416	3,882	51,327	—5,711

the Administrative Accounts of the Province,
spent by the Patiala State on maintenance of State channels,
Accounts of the Province,
by the Native States of Patiala, Nabha and Jind, respectively.

STATEMENT SHOWING THE FINANCIAL RESULTS OF IRRIGATION

No. of works.	Name of works.	GENERAL FINANCIAL RESULTS TO END OF 1919-20.								
		Mileage in operation.		Estimated cost of construction (direct and indirect).	Date of completion of work (P. W. D. Code, Volume II, 1916).	Date when the system first came into operation.	Total capital outlay (direct and indirect).	Accumulated interest.	Accumulated revenue.	Total sum-at-charge (columns 7 and 9).
		Main Canal and Branches.	Distributaries.							
1	2	3	4	5	6a	6b	7	8	9	10
	MAJOR WORKS.	Miles.	Miles.	Rs.			Rs.	Rs.	Rs.	Rs.
	PRODUCTIVE WORKS.	(a)	(b)							
1	Western Jumna Canal, including Sirsa Branch.	294	1,780	1,75,75,341	Western Jumna Canal, 1896; Sirsa, 1895	1820	1,77,95,067	...	5,65,76,702	1,77,95,067
2	Sirhind Canal	318	1,695	2,55,31,173	1886-87	1891-92 1893-84	2,57,64,315	...	2,22,36,958	2,57,61,643
3	Upper Bari Doab Canal.	324	1,501	2,15,58,163	1878-79	1860-61	2,22,70,359	...	5,44,97,574	2,22,76,359
4	Lower Bari Doab Canal	182	1,180	2,23,48,918	31st March 1917	1918-14	2,27,56,691	...	16,91,320	2,27,56,691
5	Upper Chenab Canal	173	1,178	3,49,47,918	31st March 1917	1912-13	3,55,49,150	65 41,609	...	4,20,43,759
6	Lower Chenab Canal	427	2,248	3,32,67,670	1899-1900	*	3,26,81,045	...	16,55,13,132	3,26,81,045
7	Upper Jhelum Canal	128	636	4,34,19,280	31st March 1917	1915-16	4,45,19,018	1,40,00,289	...	5,85,29,57
8	Lower Jhelum Canal	195	995	1,81,20,080	31st March 1917	1901	1,69,91,969	...	2,50,11,010	1,69,91,969
9	Upper Sutlej Inundation Canals.	328	394	17,47,010	Upper Sutlej 1865-69 Lower Sutlej and Para Canal. 1885-90	1846 1884	19,18,378	...	40 88,678	19,18,378
10	Sidhmal Canals	68	255	12,00,417	1886	1889 Prior to 1849	13,32,670	...	79,83,737	13,32,670
11	Indus Inundation Canals.	442	801	29,22,784	1849-50		29,78,628	5,53,494	...	35,32,112
	Total	2,829	12,077	22,34,78,244	...	...	22,44,57,003	2,11,38,382	33,82,82,312	24,55,95,305
	CONTRIBUTION.									
12	Western Jumna Canal	35	161	11,64,221	...	...	11,64,229	...	...	11,64,229
13	Sirhind Canal	219	1,810	1,43,27,208	...	...	1,34,31,100	...	...	1,34,31,100
	Total	254	1,961	1,54,91,627	...	...	1,45,93,329	...	...	1,45,93,329
	WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.									
14	Shahpur Canal	71	66	2,25,021	1870-71	1870	2,25,021	...	12,10,349	2,25,021
15	Ghaggar Canal. { Imperial	41	34	3,78,777	1 08-99	1897	3,78,777	11,63,188	...	15,41,910
	{ Contribution.	53	...	2,60,631	...	...	2,66,681	...	...	2,66,631
	Total { Imperial	116	100	6,43,798	...	...	6,43,798	11,63,188	12,10,349	17,66,931
	{ Contribution	53	...	2,60,631	...	...	2,66,631	...	...	2,66,631
	WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.									
16	Lower Sutlej Inundation Canals.	408	257	...	1895	} Were in operation prior to the annexation of the Punjab by the British.	...	...	81,48,114	...
17	Chenab Inundation Canals.	266	64	...	1895		...	...	77,86,980	...
18	Muzaffargarh Inundation Canals.	421	725	...	1896		...	...	59,87,639	...
	Total	1,095	1,076	...	...		...	...	2,49,72,083	...
	Provincial									
19	Shahpur Canal	55	52	...	...	...	...	...	2,72,570	...
	Total	55	52	...	...	...	...	...	2,72,570	...

* Opened as an Inundation Canal in 1887 and as a Perennial Canal in 1892.
(a) Includes 4 miles and (b) 45 miles of the Lower Chyatsang Nallah Canal.

WORKS FOR, AND UP TO THE END OF, 1919-20.

FINANCIAL RESULTS OF THE YEAR 1919-20.									
Gross receipts (direct and indirect).	Working expenses (direct and indirect).	Net Revenue.	Percentage on Capital outlay (column 7).	Percentage on sum-at-charge (column 10).	Interest at 3-4076 per cent. on the Direct Capital Outlay to end of the previous year plus half the outlay of the year.	Net profit.	Net loss.	Area irrigated.	Percentage of working expenses to receipts (columns 11 to 12).
11	12	13	14	15	16	17	18	19	20
Rs.	Rs.	Rs.			Rs.	Rs.	Rs.	Acres.	
35,00,124	15,76,636	19,23,488	11.17	11.17	5,78,900	14,10,679	...	780,757	44.21
43,00,808	19,03,040	23,97,768	12.63	11.63	8,85,036	21,50,102	...	1,001,017	31.25
52,20,764	15,25,176	37,01,570	16.61	16.61	7,48,620	20,53,058	...	1,252,583	29.18
45,62,160	12,82,370	32,79,790	14.41	14.41	7,77,545	25,02,251	...	869,432	28.10
27,09,076	14,78,004	12,30,071	3.63	3.06	11,89,817	1,01,454	...	542,656	13.39
1,68,43,232	22,27,333	1,46,15,899	41.72	44.72	10,80,511	1,37,20,388	...	2,455,223	18.22
12,00,729	10,11,654	1,89,075	44	33	13,16,257	...	13,17,182	298,857	53.62
42,02,078	10,11,210	32,91,418	19.32	19.32	5,81,418	27,00,000	...	819,900	23.68
7,47,000	4,40,881	2,06,119	16.15	16.15	59,302	2,35,877	...	343,249	60.10
6,50,792	1,22,574	5,28,218	10.05	10.05	43,021	4,80,007	...	289,766	15.78
5,32,700	3,10,457	2,22,243	7.40	6.21	94,750	1,23,541	...	239,043	59.27
4,47,63,689	1,23,10,227	3,24,01,451	14.43	13.10	75,19,495	2,02,02,133	13,17,182	88,90,006	27.00
						2,48,54,256			
724	67,622	-66,898	5.74	6.74	...	...	66,828	74,225	9,326.24
85,091	2,08,893	-2,19,780	1.59	1.59	...	...	2,13,789	514,200	351.33
85,818	3,66,405	-2,80,587	1.92	1.92	...	...	2,50,017	618,425	426.67
86,072	77,181	8,891	3.05	3.95	7,537	1,351	...	45,309	80.07
0,624	25,311	-24,687	7.61	1.90	12,617	...	41,484	15,247	541.70
...	5,033	-5,033	2.06	2.06	...	...	5,033	8,543	...
92,599	1,12,626	-10,027	3.30	1.12	20,154	1,851	41,484	61,056	121.01
...	5,033	5,033	2.06	2.06	...	...	5,033	3,513	...
4,01,202	4,39,625	2,767	...	...	...	25,767	...	301,555	94.45
3,00,837	1,77,008	1,23,829	...	...	...	1,50,319	...	162,076	48.31
6,86,677	3,30,541	2,47,133	...	...	...	3,47,133	...	304,350	49.43
16,17,321	9,55,077	6,62,244	...	...	...	5,01,240	...	848,631	62.04
45,010	51,827	-5,711	...	...	...	...	5,711	35,043	113.51
45,010	51,827	-5,711	...	...	...	...	5,711	35,043	112.51

III C.

STATEMENT SHOWING DEMANDS AND REALIZATIONS IN THE PUNJAB PROVINCE
FOR THE YEAR 1919-20.

Name of Canals.	Balance of demands remaining unrealized at the commencement of the year.	Demands during the year.	Total.	Deducted remissions not including cash refunds.	Net amount.	Realizations.	Amount unrealized at the close of the year.
1	2	3	4	5	6	7	8
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
XXIX.—MAJOR WORKS— DIRECT REVENUE							
<i>Water or occupiers' rate.</i>							
Western Jumna Canal ...	8,198	32,24,402	32,32,600	28,692	32,03,908	11,92,107	21,801
Sirhind Canal ...	1,53,899	40,38,856	41,92,251	31,431	41,60,820	39,19,893	2,10,927
Upper Bari Doab Canal	41,288	42,70,011	43,20,299	28,110	42,92,189	42,77,027	15,193
Lower Bari Doab Canal ...	4,198	29,00,401	29,04,599	3,02,401	26,02,198	26,58,511	3,651
Upper Chenab Canal	35,788	27,90,772	27,72,555	1,07,318	26,65,237	26,06,072	69,665
Lower Chenab Canal ...	1,616	90,44,087	90,45,503	10,378	90,35,125	91,31,705	1,420
Upper Jhelum Canal ...	4,881	11,76,868	11,81,741	899	11,80,846	11,73,061	6,882
Lower Jhelum Canal ...	7,075	27,47,280	27,55,255	181	27,55,074	27,51,032	—18
Upper Sutlej Inundation Canals ...	1,643	5,62,664	5,64,297	35,013	5,29,284	5,22,207	6,777
Sidbani Inundation Canals ...	1,582	5,53,902	5,55,574	917	5,54,657	7,54,393	289
Indus Inundation Canals ...	29,546	2,68,769	2,98,315	19	2,98,296	(a) 2,32,179	66,107
Total ...	2,90,309	3,16,94,006	3,18,81,816	5,16,070	3,13,65,745	(a) 3,09,46,778	3,92,867
Owners' rates.							
Lower Chenab Canal ...	...	7,398	7,398	...	7,398	7,398	...
XXX.—MINOR WORKS AND NAVIGATION.							
<i>(Imperial.)</i>							
Lower Sutlej Inundation Canals ...	1,191	2,16,602	2,16,753	..	2,16,753	2,15,242	941
Muzaffargarh Inundation Canals ...	10,915	2,50,187	2,61,132	22	2,61,110	2,60,016	5,694
Chenab Inundation Canals ...	2,197	1,56,254	1,58,451	111	1,58,340	1,58,635	1,605
Hajiwah Inundation Canals ...	123	18,399	18,512	...	18,512	18,489	23
Shahpur Canal ...	—35	70,469	70,434	3,012	67,422	67,134	—12
Ghaggar Canal ...	...	8,808	8,808	2,303	6,505	6,505	...
Total ...	11,361	7,40,160	7,63,520	5,745	7,57,772	7,40,021	7,851
<i>(Provincial.)</i>							
Shahpur Canal ...	65	36,862	37,027	1,239	35,788	35,681	107
Namal Dam and Canal ...	8	48,895	48,888	...	48,836	48,898	...
Total ...	68	85,797	85,865	1,239	84,626	84,579	107

(a) Includes Rs. 70,498 on account of Dhundi Estate.

LAWSON WORKS,	Capital outlay, Direct and Indirect, to end of the year 1915-20.	REVENUE ASSESSED DURING THE YEAR.									Working expenses, Direct and Indirect.	Not assessed Revenue of the year.	Percentage on Capital Outlay to end of the year.
		DIRECT ASSESSED RECEIPTS.								Grand Total.			
		Oscupiers' rates.	Owners' rates.	Plantation.	Water power.	Navigation.	Miscellaneous.	Total.	Indirect receipts.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14
PRODUCTIVE WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
IMPERIAL.													
Western Jumna Canal ...	1,77,85,087	31,14,403	..	18,857	5,081	1,24,904	51,033	86,16,281	1,83,509	87,98,890	15,76,636	22,32,244	12'47
Bethind Canal ...	2,87,64,045	41,29,705	..	44,000	1,41,177	18,002	81,783	44,08,827	1,23,183	45,94,110	18,03,090	31,71,070	12'15
Upper Bari Doab Canal ...	2,32,76,358	44,61,121	..	95,901	1,48,605	..	2,28,531	40,21,854	5,26,710	54,47,564	15,25,178	39,22,168	17'60
Lower Bari Doab Canal ...	3,27,86,891	20,44,588	..	3,305	1,08,130	36,78,413	21,01,315	51,77,728	12,82,370	39,95,868	17'12
Upper Chenab Canal ...	3,55,40,169	27,58,678	..	753	32,506	27,02,035	8,91,240	36,94,175	14,78,804	22,05,671	6'20
Lower Chenab Canal ...	3,28,81,045	93,03,320	7,506	30,524	16,820	203	73,630	01,31,010	78,81,589	1,72,00,708	22,27,333	1,50,08,805	46'11
Upper Jhelum Canal ...	4,45,10,018	12,76,427	..	1,010	40,101	13,16,821	7,00,281	20,17,065	10,11,854	10,05,411	2'26
Lower Jhelum Canal ...	1,68,84,069	27,07,807	..	11,132	39,906	..	20,352	28,77,887	14,57,537	43,35,434	10,11,210	33,34,224	19'57
Upper Sutlej Inundation Canals ...	18,18,873	5,79,998	..	4,067	11,620	5,08,596	2,06,201	8,01,798	4,40,581	3,51,815	10'31
Sidhuwal Inundation Canals ...	19,38,879	6,41,623	..	1,081	4,691	8,47,285	90,780	7,44,065	1,22,874	6,21,311	46'00
Indus Inundation Canals ...	29,78,028	2,78,133	..	4,131	8,253	2,85,517	2,03,223	5,78,740	3,10,457	2,68,283	0'01
Total ...	22,44,57,083	8,25,68,301	7,506	2,12,033	3,51,702	1,43,106	6,08,137	3,38,00,055	1,14,45,621	1,84,15,575	1,23,50,217	3,90,58,338	16'06
CONTRIBUTION.													
Western Jumna Canal ...	11,64,229	3,21,110	..	240	3,684	3,29,014	..	3,33,014	1,09,339	2,18,675	18'78
Birhind Canal ...	1,34,34,100	24,34,174	..	24,770	43,893	10,031	45,463	25,58,331	..	25,58,331	6,97,835	18,70,086	18'03
Total ...	1,45,98,329	27,55,284		25,010	43,893	10,031	49,127	28,86,345	..	28,86,345	7,96,074	20,80,671	14'02
WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.													
Shahpur Canal ...	2,26,021	89,210	80,210	18,038	1,18,149	77,184	40,964	18'20
Ghaggar Canals { Imperial ...	3,79,777	8,386	10	8,385	..	8,385	36,311	-20,958	-7'36
{ Contribution ...	2,88,631	7,182	398	17,580	..	7,580	*11,229	-3,640	-1'27
Total { Imperial ...	6,03,708	1,07,576	10	1,07,605	18,018	1,26,733	1,12,525	14,008	2'33
{ Con'tribution ..	2,88,631	7,182	398	17,580	..	7,580	*11,229	-3,640	-1'27
WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.													
Lower Sutlej Inundation Canals	2,61,094	..	2,278	2,012	2,85					

*Includes Rs. 6,297 spent by the Hikaner State.
†Figures reported by the Hikaner State.

I D.

STATEMENT OF TRAFFIC ON CANALS IN THE PUNJAB DURING THE YEAR 1919-20.

Particulars.	Western Jumna Canal.	Sirhind Canal.
Length of Channel open for navigation ... Miles	121	138
Receipts—		
Tollage on private boats ... Rs.	119	2,031
„ „ Government boats ... „	...	...
„ „ rafts ... „	1,24,785	26,002
Carrying operations or transport service—		
Hire of Government boats ... „	...	...
Refund of revenue ... „	...	...
Total receipts ... „	1,24,904	26,033
Maintenance charges, including special Navigation Establishment „	1,451	6,289
Net revenue of year ... „	1,23,453	21,744
Total number of boats plying cargo ...	...	...
„ „ „ „ passengers ...	...	...
Total registered tonnage cargo ...	...	...
„ „ „ „ passengers ...	...	...
Ton mileage, Up (a) ...	...	...
Down ...	...	...
Total ...	...	...
Estimated value of cargoes, Up (a) ... Rs.	...	...
„ „ „ Down ... „	...	...
Total ... „	...	...
Number of passengers ...	...	25,050
Rafts, Up ... C. ft.	...	2,723,660
„ Down ... „	2,969,825	...
Total ... „	2,969,825	2,723,660
Estimated value of rafts ... Rs.	52,04,573	20,81,234
Tollage on boats per ton per mile (a) ...	...	...
„ „ rafts per 100 c.ft. ...	4.21	0.95

(a) Details of boat traffic are not recorded (Government of India, Public Works Department, No. 78-I., dated 22nd April 1922).

II D.

DESCRIPTION AND QUANTITIES OF RAFT TRAFFIC ON CANALS IN THE PUNJAB, DURING THE YEAR 1919-20.

Particulars.	WESTERN JUMNA CANAL.						SIRHIND CANAL.						TOTAL.			
	TOTAL.			PRIVATE.			TOTAL.			PRIVATE.			TOTAL.		PRIVATE.	
	Quantity in tons.			Value.			Quantity in tons.			Value.			Quantity in tons.		Value.	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Up.	Down.	Total.	Ra.	Tons.	Ra.	Up.	Down.	Total.	Ra.	Tons.	Ra.	Up.	Down.	Total.	Ra.
Timber in logs, round and squared
Sleepers, broad gauge
" metre "
Scantlings
Bamboos and reeds
Firewood
Total

NOTE.—According to the new system details under the Western Jumna Canal cannot be filled in.

I E with Appendix A.

STATEMENT OF AREAS IRRIGATED BY IRRIGATION WORKS IN THE PUNJAB DURING THE YEAR 1919-20.

NUMBER OF DAYS CANAL WAS IN FLOW.				AREA IRRIGATED IN ACRES.						AVERAGE DISCHARGE, IN CUSECS.						AREA IRRIGATED, PER CUSEC.					
NAMES OF CANALS.				Kharif.		Rabi.		TOTAL.		Flow.	Lift.	DOUBLE CROPPED.		AT HEAD less VOLUME SOAKED.		AT DISTRIBUTARY HEADS.		AT HEAD less VOLUME SOAKED.		AT DISTRIBUTARY HEADS.	
				Irrigated.	Assessed.	Irrigated.	Assessed.	Irrigated.	Assessed.			Area irrigated.	Percent- age of area irrigated.	Kharif.	Rabi.	Kharif.	Rabi.	Kharif.	Rabi.	Kharif.	Rabi.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Major Irrigation Works.																					
Western Jumna Canal (including Sirsa Branch British and Patiala).	169	178		424,436	422,472	430,516	427,444	851,992	849,916	841,906	13,076	84,622	9.90	4,245	3,003	3,491	2,548	100	143	122	169
Sirhind Canal (British) ...	162	1-3		403,647	402,463	601,270	592,838	1,004,917	995,305	1,001,352	3,615	213,574	21.25	3,823	3,123	3,049	2,033	106	193	132	228
" " (Patiala, Nabha and Jind States).	162	183		233,197	232,953	311,003	310,967	544,200	543,955	537,462	6,535	127,718	23.4	2,461	1,883	1,991	1,602	95	165	117	164
Upper Bari Doab Canal ...	180	170		639,019	633,471	613,564	612,363	1,252,593	1,245,839	1,231,572	21,011	253,375	20.23	5,229	2,869	4,036	2,156	122	214	159	285
Lower Bari Doab Canal ..	175	147		445,799	372,028	423,633	353,592	869,432	725,620	825,104	44,323	11,459	1.32	5,261	4,217	4,376	3,358	65	100	102	129
Upper Chenab Canal ...	164	139		303,845	296,080	238,911	237,023	542,656	533,103	539,253	3,403	22,113	4.07	3,665	1,776	3,436	1,592	83	134	88	141
Lower Chenab Canal ...	165	163		851,161	846,621	1,601,064	1,600,660	2,455,235	2,447,281	2,414,575	40,650	168,093	6.84	8,959	7,713	7,249	8,560	95	208	117	243
Upper Jhelum Canal ...	169	165		130,851	129,012	168,066	166,980	298,937	295,992	298,758	99	2,298	0.77	1,563	944	1,425	1,068	84	178	92	169
Lower Jhelum Canal ...	163	174		284,070	231,182	534,830	533,263	618,900	614,425	610,545	2,355	16,015	1.96	3,083	2,606	2,594	2,519	92	191	110	212
Upper Sutlej Canals ...	157	...		193,679	183,962	149,570	149,570	343,249	333,533	339,309	3,940	21,596	6.29	4,345				79			79
Sidhuai Canals ...	125	52		139,749	119,004	114,037	123,335	283,786	242,239	277,124	6,562	1,792	0.63	1,223				232			232
Indus Inundation Canals ...	138	4		166,489	125,815	73,154	57,649	239,643	183,461	231,419	8,224	364	0.15	3,929				61			61
Total ...				4,215,942	4,045,083	5,292,488	5,165,989	9,308,430	9,210,872	9,354,529	153,901	923,957	9.71								
Minor Irrigation Works.																					
Shahpur (Imperial) Inundation Canals	131	...		25,101	24,113	20,703	20,509	45,809	44,022	45,766	43	...	...	...	648			71			71
Ghaggar Inundation Canals (British)	73	...		7,288	7,025	7,959	7,922	15,347	14,947	15,247	...	...	...	409				37			37
" " (Bikaner)	...	...		1,276	1,050	2,372	1,755	3,143	2,808	3,548	...	...	...	169				22			22
Lower Sutlej Inundation Canals ...	135	38		145,102	109,250	156,453	137,134	301,555	246,684	295,069	16,498	6	0.002	2,669				113			113
Chenab Inundation Canals ...	132	...		91,687	68,542	90,989	83,404	182,876	151,946	180,265	2,411	454	0.35	2,647				70			70
Muzaffargarh Inundation Canals ...	147	24		159,343	140,776	205,007	191,437	364,350	332,213	360,773	3,577	38,122	10.46	4,901				73			73
Shahpur (Provincial) Inundation Canal	192	...		25,383	23,646	9,757	9,415	35,043	33,061	35,026	18	164	.47	494				71			71
Total ...				453,083	374,402	493,145	451,579	948,228	856,281	925,693	23,535	38,746	4.09								

APPENDIX A TO STATEMENT I E.

STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20.

CAUSE OF REMISSION.	KHARIF, 1919.				RABI, 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
1	2	3	4	5	6	7	8	9
WESTERN JUMNA CANAL.								
	Acrea.	Acrea.	Acrea.		Acrea.	Acrea.	Acrea.	
1. Wrong assessment	23	...	...	...	41	...	...
2. Escape irrigation
3. Under Tenancy Rules	2	...	...	...	2	...	...
4. Short supply	414	...	...	...	201	...	...
5. Hail	6	...	...	...	1,661	...	...
6. Frost
7. High wind
8. Flooding { (a) by heavy rain (b) from canal	...	594 3	...	...	...	662 29	...	...
9. Rats
10. Locusts
11. Other insects and blight	354	...	...	...	269	...	...
12. Bad germination or cultivation	381	...	...	...	289	...	...
13. Bad soil	140	...	...	...	28	...	...
14. High land	4	...	...
15. Miscellaneous	48	...	...	...	126	...	...
Total ...	422,472	(a) 1,901	424,430	0.46	427,414	3,102	430,543	0.72
SIRHIND CANAL (IMPERIAL).								

1. Wrong assessment	4	...	...
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	3	...	...	...	1,391	...	...
5. Hail	49	...	...	...	5,557	...	...
6. Frost	432	...	...
7. High wind	8	...	...	...	...	...	...
8. Flooding { (a) by heavy rain (b) from canal	...	42 2	...	...	...	3 7	...	...
9. Rats
10. Locusts	8	...	...
11. Other insects and blight	615	...	...	...	46	...	...
12. Bad germination or cultivation	165	...	...	...	418	...	...
13. Bad soil	7	...	...	...	8	...	...
14. High land
15. Miscellaneous	238	...	...	...	553	...	...
Total ...	402,468	1,179	403,647	0.29	562,538	8,432	601,270	1.40
UPPER BARI DOAB CANAL.								

1. Wrong assessment	3	...	...	...	6	...	...
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	519	...	...	...	447	...	...
5. Hail	166	...	...
6. Frost
7. High wind	185	...	...
8. Flooding { (a) by heavy rain (b) from canal	...	1,511 2	...	...	...	91 2	...	...
9. Rats
10. Locusts	11	...	...
11. Other insects and blight	2,368	...	...	...	88	...	...
12. Bad germination or cultivation	319	...	...	...	102	...	...
13. Bad soil	33	...	...	...	40	...	...
14. High land
15. Miscellaneous	795	...	...	...	103	...	...
Total ...	639,471	5,548	639,019	0.87	612,363	1,196	613,564	0.19

(a) Detail of area remitted—

	Kharif.		Rabi.	
In the five Divisions	1,808	...	3,075
In Patiala State	79	...	22
In Jind State	17	...	6
Total	1,904	...	3,102

**STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20—CONTINUED.**

CAUSE OF REMISSION.	KHARIF, 1919.				RABI, 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
1	2	3	4	5	6	7	8	9
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.	
LOWER BARI DOAB CANAL.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules	29,390	...	...	...	27,376	...	...
4. Short supply	590	...	...	...	1,007	...	...
5. Hail	15	...	...	...	9,497	...	...
6. Frost
7. High wind	71	...	...
8. Flooding { (a) by heavy rain	...	569	...	...	...	2	...	...
{ (b) from canal	...	47	...	...	...	6	...	...
9. Rats	1	...	...
10. Locusts
11. Other insects and blight	2,227	...	...	...	12	...	...
12. Bad germination or cultivation	5,760	...	...	...	5,553	...	...
13. Bad soil	16,761	...	...	...	12,257	...	...
14. High land	15	...	...	...	37	...	...
15. Miscellaneous	18,389	...	...	...	14,222	...	...
Total ...	372,028	73,771	445,799	10.55	353,502	70,041	423,543	16.53
UPPER CHENAB CANAL.								
1. Wrong assessment	160	...	...
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	2,174	...	...	...	30	...	...
5. Hail	186	...	...
6. Frost
7. High wind
8. Flooding { (a) by heavy rain	...	206	...	...	...	54	...	...
{ (b) from Canal
9. Rats
10. Locusts	15	...	...	...	99	...	...
11. Other insects and blight	345	...	...	...	55	...	...
12. Bad germination or cultivation	539	...	...	...	303	...	...
13. Bad soil	689	...	...	...	490	...	...
14. High land	411	...	...
15. Miscellaneous	3,797	...	...	...	...	...	...
16. Cotton remission
Total ...	298,080	7,765	303,845	2.56	237,023	1,788	233,811	0.75
LOWER CHENAB CANAL.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules	492	...	...	...	845	...	...
4. Short supply	147	...	...	...	107	...	...
5. Hail	154	...	...	...	98	...	...
6. Frost
7. High wind	13	...	...	...	...	...	...
8. Flooding { (a) by heavy rain	...	427	...	...	...	1	...	...
{ (b) from Canal
9. Rats
10. Locusts	123	...	...	...	3	...	...
11. Other insects and blight	658	...	...	...	86	...	...
12. Bad germination or cultivation	853	...	...	...	861	...	...
13. Bad soil	395	...	...	...	294	...	...
14. High land	48	...	...	...	15	...	...
15. Miscellaneous	1,230	...	...	...	1,094	...	...
Total ...	£46,621	4,540	851,161	0.53	1,600,680	3,404	1,604,064	0.21

**STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20—CONTINUED.**

CAUSE OF REMISSION.	KHARIF, 1919.				RABI, 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
	2	3	4	5	6	7	8	9
1	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.	
UPPER JHELUM CANAL.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply
5. Hail	24	...	...	...	...	...	...
6. Frost
7. High wind	295	...	...
8. Flooding { (a) by heavy rain { (b) from canal	...	156	...	...	...	18	...	...
9. Rats
10. Locusts
11. Other insects and blight	25	...	...	...	...	...	...
12. Bad germination or cultivation	196	...	...	...	...	...	...
13. Bad soil	1,108	...	...	...	...	...	...
14. High land	289	...	...	...	312	...	...
15. Miscellaneous	322	...	...
16. Perpetual remission	41	...	...	...	...	...	...
17. Deg Nallah	68	...	...
Total	129,012	1,529	130,541	1.41	166,980	1,026	168,006	0.61
LOWER JHELUM CANAL.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	997	...	...	...	...	...	...
5. Hail	91	...	...	...	1,122	...	...
6. Frost	13	...	...
7. High wind
8. Flooding { (a) by heavy rain { (b) from canal	...	27	...	...	...	...	...	...
9. Rats	2	...	...
10. Locusts
11. Other insects and blight
12. Bad germination or cultivation	6	...	...	...	51	...	...
13. Bad soil	935	...	...	...	13	...	...
14. High land	189	...	...	...	109	...	...
15. Miscellaneous	53	...	...
Total	281,162	2,908	284,070	1.02	533,263	1,567	534,830	0.29
UPPER SUTLEJ INUNDATION CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply
5. Hail	8,770	...	...	...	...	...	...
6. Frost
7. High wind
8. Flooding { (a) by heavy rain { (b) from canal
9. Rats	85	...	...	...	...	...	...
10. Locusts
11. Other insects and blight
12. Bad germination or cultivation	862	...	...	...	...	...	...
13. Bad soil
14. High land
15. Miscellaneous
Total	183,002	9,717	192,719	5.02	149,570	...	149,570	...

**STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20—CONTINUED.**

CAUSE OF REMISSION.	KHARIF 1919.				RABI 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
1	2	3	4	5	6	7	8	9
SIDHNAI CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	10,471	...	...	...	...	...	...
5. Hail	6,855	...	...
6. Frost	2,204	...	...
7. High wind
8. Flooding { (1) by heavy rain	...	841	...	...	...	174	...	...
(2) from canal
(3) from river
9. Rats
10. Locusts
11. Other insects and blight	36	...	...	...	74	...	...
12. Bad germination or cultivation
13. Bad soil	9,447	...	...	...	11,873	...	...
14. High land
15. Miscellaneous	450	...	...	...	122	...	...
Total ...	119,004	20,745	139,749	14.84	123,235	20,802	144,037	14.44
INDUS INUNDATION CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	4,153	...	...	...	68	...	...
5. Hail
6. Frost
7. High wind	5,781	...	...
8. Flooding { (1) by rain	302	...	...	...	818	...	...
(2) from canal	...	3,137	...	...	...	58	...	...
(3) hill torrent	...	776	...	...	...	...	...	...
(4) from river
9. Rats
10. Locusts
11. Other insects and blight
12. Bad germination or cultivation	3,862	...	...	...	...	...	...
13. Bad soil	32	...	...
14. High land	27,858	...	...	...	8,567	...	...
15. Soma water
16. Scanty rain
17. Miscellaneous	1,056	...	...	...	151	...	...
Total ...	125,815	40,674	166,489	24.43	57,649	15,505	73,154	21.20
CHENAB INUNDATION CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply
5. Hail	1,752	...	...	...	...	...	...
6. Frost	36	...	...
7. High wind	2,688	...	...
8. Flooding { (1) by rain
(2) from canal	...	10,372	...	...	...	...	...	...
(3) from river	...	731	...	...	...	...	...	...
9. Rats
10. Locusts
11. Other insects and blight
12. Bad germination or cultivation	202	...	...
13. Bad soil
14. High land	7,866	...	...	...	4,645	...	...
15. Miscellaneous	2,404	...	...	...	64	...	...
Total ...	68,542	22,145	91,887	25.24	83,404	7,585	90,989	8.34

**STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20—CONTINUED.**

CAUSE OF REMISSION.	KHARIF 1919.				RABI 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
1	2	3	4	5	6	7	8	9
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.	
LOWER SUTLEJ INUNDATION CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	9,193	...	...	...	...	...	...
5. Hail
6. Frost	1,056	...	...
7. High wind
8. Flooding { (a) by heavy rain (b) from canal	...	1,554 140	...	...	...	...	...	...
9. Rats
10. Locusts
11. Other insects and blight...	...	101	...	...	...	58	...	...
12. Bad germination or cultivation	...	71	...	...	...	3,018	...	...
13. Bad soil	19,065	...	...	...	...	...	...
14. High land	25	...	...	...	...	...	...
15. Miscellaneous	5,704	...	...	...	14,827	...	...
Total ...	109,250	35,852	145,102	21.71	137,431	10,019	153, 53	12.16
MUZAFFARGARH INUNDATION CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	7,694	...	...	...	763	...	...
5. Hail	2,791	...	...
6. Frost
7. High wind
8. Flooding { (a) by heavy rain (b) from canal	...	1,042	...	...	...	...	...	...
9. Rats
10. Locusts
11. Other insects and blight	...	1,633	...	...	...	853	...	...
12. Bad germination or cultivation	...	357	...	...	...	708	...	...
13. Bad soil	6,103	...	...	...	7,791	...	...
14. High land
15. Miscellaneous	835	...	...	...	1,451	...	...
Total ...	140,776	18,567	159,343	11.65	191,437	13,570	205,007	0.62
SHAMPUR IMPERIAL CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply
5. Hail
6. Frost
7. High wind
8. Flooding { (a) by heavy rain (b) from canal
9. Rats
10. Locusts
11. Other insects and blight	40	...	...
12. Bad germination or cultivation	...	300	...	...	...	59	...	...
13. Bad soil	188	...	...	...	...	...	...
14. High land
15. Miscellaneous	500	...	...	...	100	...	...
Total ...	21,118	988	25,101	3.93	20,600	199	20,768	0.96

**STATEMENT SHOWING AREAS ON WHICH OCCUPIERS' RATES WERE REMITTED
DURING THE YEAR 1919-20—CONCLUDED.**

CAUSE OF REMISSION.	Kharif, 1919.				Rabi, 1919-20.			
	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.	Area assessed.	Area remitted.	Total area irrigated.	Percentage remitted.
1	2	3	4	5	6	7	8	9
	Acres.	Acres.	Acres.		Acres.	Acres.	Acres.	
GHAGGAR CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules
4. Short supply	416	...	...	...	25	...	...
5. Hail	12	...	...
6. Frost
7. High wind	517	...	...
8. Flooding { (a) by heavy rain (b) from canal
9. Rats
10. Locusts
11. Other insects or blight	43	...	...	...	...	...	...
12. Bad germination or cultivation	4	...	...
13. Bad soil	3	...	...
14. High land
15. Miscellaneous
Total ...	8,075	(A) 189	8,551	5.71	9,680	(B) 551	10,231	5.38
SHAHPUR PROVINCIAL CANALS.								
1. Wrong assessment
2. Escape irrigation
3. Under Tenancy Rules	878	...	...	...	211	...	...
4. Short supply
5. Hail
6. Frost
7. High wind
8. Flooding { (a) by heavy rain (b) from canal	...	710	...	...	...	...	...	...
9. Rats
10. Locusts
11. Other insects or blight
12. Bad germination or cultivation
13. Bad soil	27	...	...	...	...	...	...
14. High land
15. Miscellaneous	101	...	...
Total ...	23,616	1,610	25,236	6.19	9,115	312	9,757	3.51
						(A)	(B)	
British	203	37	
Bikaner	226	514	
Total	489	551	

II E.

STATEMENT SHOWING INCIDENCE OF WORKING EXPENSES AND ASSESSED WATER REVENUE ON THE CANALS IN THE PUNJAB DURING 1919-20.

NAMES OF CANALS.	WATER RATE ASSESSED IN 1919-20.							WORKING EXPENSES.					OCCUPYERS' RATES.			TOTAL WATER RATE, DIRECT AND INDIRECT.		
	Average discharge of the canal in cu. ft. per second.	Occupiers.	Owners.	Total direct.	Indirect.	Total direct and indirect.	Gross assessed revenue from all sources.	Working expenses, direct and indirect.	Area assessed during 1919-20.	Per cent. on gross revenue.	Per acre assessed.	Per cu. ft. of discharge.	Per acre assessed.	Per cu. ft. of discharge.	Per acre assessed.	Per cu. ft. of discharge.	Per acre assessed.	Per cu. ft. of discharge.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MAJOR IRRIGATION WORKS.																		
Western Jamna Canal (including Sirsa Branch, British and Patiala).	3,537	37,39,513	...	37,38,513	1,33,399	39,22,112	41,26,894	15,85,975	84,916	40.95	1.99	470	439	1,042	1.61	1,093	4.61	1,093
Sirhind Canal (British).	3,453	41,20,965	...	41,20,965	1,25,183	42,46,148	45,31,110	13,03,040	995,906	30.00	1.37	395	414	1,191	4.27	1,230	4.27	1,230
" (Patiala, Nabha and Jind States).	2,166	24,34,174	...	24,34,174	...	24,34,174	25,68,381	6,87,335	513,955	28.86	1.36	319	417	1,129	4.47	1,129	4.47	1,129
Upper Bari Doab Canal	4,083	44,51,121	...	44,51,121	5,23,710	49,74,831	54,37,361	13,25,178	1,216,889	28.00	1.42	268	409	620	3.99	1,319	3.99	1,319
Lower Bari Doab Canal	4,754	29,84,588	...	29,84,588	21,01,315	50,85,903	51,77,728	12,93,370	725,620	21.77	1.77	268	409	620	3.99	1,319	3.99	1,319
Upper Chenab Canal	2,799	27,59,176	...	27,59,176	8,91,210	36,50,386	38,51,175	11,78,604	533,103	40.13	2.77	528	360	1,117	6.85	1,304	6.85	1,304
Lower Chenab Canal	8,330	93,03,290	...	93,10,736	78,61,588	1,71,75,324	1,72,96,199	22,97,333	2,447,231	12.88	0.91	267	361	1,014	7.02	2,032	7.02	2,032
Upper Jhelum Canal	1,293	12,75,407	...	12,75,407	7,60,234	19,35,641	20,17,085	10,11,654	295,993	50.15	3.42	804	431	1,014	6.67	1,570	6.67	1,570
Lower Jhelum Canal	2,940	27,97,507	...	27,97,507	1,57,587	29,55,094	33,35,484	1,11,210	814,425	28.32	1.24	344	341	952	5.22	1,447	5.22	1,447
Upper Sutlej Canals	4,345	5,79,958	...	5,79,958	2,06,201	7,86,159	8,01,793	4,49,881	333,532	56.12	1.95	101	174	134	2.36	1,181	2.36	1,181
Sidhmata Canals	1,223	6,41,623	...	6,41,623	96,791	7,38,413	7,44,085	1,22,874	212,269	10.51	0.51	100	265	524	3.05	604	3.05	604
Indus Irrigation Canals	3,920	2,78,133	...	2,78,133	2,93,223	5,71,356	5,78,740	3,10,457	1,81,464	69.61	1.63	79	152	71	3.11	145	3.11	145
Total	...	3,53,44,845	7,508	3,53,52,351	1,44,43,020	4,97,97,371	5,13,01,920	1,31,56,911	9,210,672	...	...	...	...	...	...	...	...	...
MINOR IRRIGATION WORKS.																		
Shabpur (Imperial) Irrigation Canals	618	99,210	...	99,210	18,935	1,18,148	1,18,148	77,181	44,522	65.33	1.73	119	222	153	3.05	182	3.05	182
Ghaggar Irrigation Canals (British)	409	8,366	...	8,366	...	8,366	8,366	85,341	14,947	431.18	2.46	86	956	20	0.56	20	0.56	20
" (Bikaner)	159	47,182	...	47,182	...	47,182	47,182	111,219	2,803	148.14	4.00	70	256	45	2.56	45	2.56	45
Lower Sutlej Irrigation Canals	2,669	2,81,094	...	2,81,094	2,25,240	5,07,334	5,17,655	4,98,525	2,16,681	85.71	1.75	164	114	105	3.06	190	3.06	190
Ghazab Irrigation Canals	2,647	1,89,229	...	1,89,229	1,05,631	2,94,860	3,00,361	1,77,003	151,946	44.32	1.16	67	125	71	2.53	145	2.53	145
Muzaffargarh Irrigation Canals	4,991	2,91,579	...	2,91,579	3,33,834	6,25,413	6,32,417	3,33,344	382,213	49.03	1.02	63	88	58	2.63	137	2.63	137
Shabpur (Provincial) Irrigation Canals	491	59,421	...	59,421	9,935	69,356	69,356	51,327	33,061	74.01	1.55	104	189	120	3.10	140	3.10	140
Total	...	9,36,081	...	9,36,081	8,44,628	17,80,709	19,06,923	11,30,158	8,26,931	...	...	...	...	...	...	...	...	...

*Includes Rs. 1,59,339 actually spent by the Patiala State.

+Figures reported by the Bikaner State.

†Includes Rs. 6,297 actually spent by the Bikaner State.

‡Includes 12,035 acres assessed by the Civil Department

STATEMENT OF QUANTITY AND VALUE OF CROPS

NAME OF CROPS.			WESTERN JUNYA CANAL.		SIRHIND CANAL (BRITISH).		SIRHIND CANAL (NATIVE STATE BRANCHES).		UPPER BARI DOAB CANAL.	
English.	Vernacular.	Scientific.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.
1	2	3	4	5	6	7	8	9	10	11
			Acres.	Rs.	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
Cereals—										
Wheat ...	Gehun ...	Triticum sativum ...	218,505	1,81,25,015	318,287	4,40,61,527	1,67,000	1,15,55,514	250,300	1,07,50,810
Barley ...	Joe ...	Hordeum vulgare ...	27,456	14,10,258	92,745	4,60,270	64,531	25,10,720	9,605	37,46,555
Rice ...	Jhona ...	Oryza sativa ...	19,010	9,55,650	1	48	5,310	2,44,788	21,677	60,01,576
Maise ...	Mokli ...	Zea mays ...	1,337	1,05,053	71,737	54,52,012	35,401	20,90,704	66,481	41,89,303
Oats ...	Jawi ...	Avena sativa ...	625	21,000	...	...	...	...	3,660	1,00,600
Mixed grain ...	Berra ...	...	26,358	7,91,810	691	20,820	14,162	4,38,100	111,161	38,55,535
Miscellaneous ...	...	...	1,641	40,502	...	...	...	...	1,148	2,256
Millets and pulses—										
Great Millet ...	Jawar ...	Sorghum vulgare ...	54,200	20,61,890	3,759	3,00,019	1,851	75,831	69,903	28,69,713
Spiked Millet ...	Bajra ...	Panicum spicatum ...	8,505	2,72,055	5,123	51,230	772	7,720	4,835	48,550
Italian Millet ...	Kangni ...	Setaria italica ...	62	1,210	700	0,000	17	610	2,201	50,121
...	Mandwa ...	Elevine coracana ...	60	1,800	...	...	1	20	1	20
...	Sawank ...	Panicum frumentaceum ...	...	...	...	...	...	...	67	1,140
Gram ...	Chana ...	Cicer arietinum ...	85,267	42,33,836	127,509	61,20,432	30,774	14,77,152	57,161	50,29,633
Lentil ...	Masur ...	Ervum lens ...	7,080	1,11,720	184	5,620	290	8,590	5,524	1,38,100
...	Rawan ...	...	...	...	...	...	...	...	...	...
...	Mattar ...	Pisum sativum ...	5,183	1,03,760	6	180	25	750	41	1,100
...	Mach ...	Phaseolus radiatus ...	107	3,810	63	2,040	52	1,660	128	3,810
...	Mung ...	Phaseolus mungo ...	40	620	81	1,080	95	1,080	...	...
...	Moth ...	Phaseolus moutifolia ...	669	0,185	2,620	3,920	293	4,470	5,793	1,44,525
...	Gaur ...	Cyamopsis tetralobes ...	3,031	45,610	33,861	10,00,420	1,426	42,780	3,141	9,78,525
Mixed Grain ...	Berra ...	...	2,028	70,840	22	410	610	10,380	162	3,870
...	Cheena ...	Panicum mitlanum ...	394	5,890	288	10,010	541	8,435	4,380	1,08,000
Miscellaneous ...	Maddal ...	...	4,845	68,175	...	...	...	...	808	13,635
Drugs and Spices—										
Tobacco ...	Tamaku ...	Nicotiana tabacum ...	468	28,050	54	4,350	5	400	2,115	3,01,275
Poppy ...	Post ...	Papaver somniferum ...	...	...	...	...	...	...	...	...
Aniseed and Dill ...	Ajwain ...	Pycnolotis ajwain ...	...	...	...	...	100	2,500	...	...
Fennel ...	Meethi ...	Trigonella fennugreekum ...	10,354	4,53,850	...	...	7	250	2	50
Coriander ...	Dhaniya ...	Coriandrum sativum ...	537	13,425	686	20,610	...	...	...	...
Cumin ...	Zira ...	Cominum officinale ...	...	...	...	...	...	...	...	...
Turnerite ...	Haldi ...	Curcuma longa ...	...	...	...	...	...	...	3	90
Aniseed ...	Saunf ...	Pimpinella anisum ...	...	...	...	...	...	...	...	...
Miscellaneous ...	Kasni ...	...	11	165	...	...	...	...	2	30
Fibres—										
Cotton ...	Rui ...	Gossypium herbaceum ...	200,732	1,70,64,418	47,783	21,09,018	72,424	33,81,604	228,073	1,06,30,424
Novella Hemp ...	San ...	Hibiscus cannabinus ...	1,421	35,525	...	...	516	15,180	3,635	1,15,060
False Hemp ...	Sanni ...	Crotalaria jansea ...	1,177	80,310	...	...	...	...	...	...
Miscellaneous ...	Munjana ...	Saccharum munja ...	...	...	3,568	50,650	...	...	...	...
Dye—										
Indigo ...	Nil ...	Indigofera tinctoria ...	220	5,500	...	...	131	4,635	...	...
Henna ...	Mcndi ...	Lawsania alba ...	...	...	...	...	...	...	4	150
Safflower ...	Kassumba ...	Carthamus tinctorius ...	2	50	...	...	...	...	...	...
Oil-seeds—										
Gingelly or Sesame ...	Til ...	Sesamum indicum ...	1,142	46,822	206	13,735	12	804	2,180	1,55,418
Rape ...	Sarson ...	Brassica campestris ...	5,616	2,26,115	12,010	8,07,289	7,947	5,32,440	11,710	8,43,768
Do ...	Toria ...	Do. (Var. toria) ...	...	...	426	23,542	1	67	30,743	22,13,906
Linseed Flax ...	Taramra ...	Eruca sativa ...	108	6,689	202	10,524	16	1,172	862	30,141
Miscellaneous ...	Alsi ...	Linum usitatissimum ...	...	...	19	1,043	6	402	708	54,561
Mixed grain ...	Toria and gram ...	...	...	...	...	...	...	...	...	...
Fruits and Vegetables—										
Orchards ...	...	...	...	...	...	...	...	...	...	...
Chillies ...	Mirch ...	Capsicum annum ...	2,080	1,66,400	891	20,100	371	30,100	2,114	1,47,990
Melons ...	Kharbuz ...	Cucumis melo ...	3,165	1,58,250	8,753	4,37,050	2,191	1,06,570	22,560	90,360
Carrots ...	Gajar ...	Daucus carota ...	66	2,540	...	...	153	7,000	...	...
Cress ...	Halm ...	Lepidium sativum ...	...	...	...	...	61	1,220	...	...
Onions ...	Piaz ...	Allium cepa ...	872	33,000	...	...	4	200	62	4,510
Turnips ...	Salgam ...	Brassica rapa ...	...	...	506	26,820	...	...	12,303	4,02,120
Water-nuts ...	Binghara ...	Trapa bicornis ...	124	5,260	...	...	...	...	514	82,640
Gardens ...	...	...	11,648	11,04,600	687	59,700	2,295	2,29,500	7,083	7,00,300
Potatoes ...	Alu ...	Solanum tuberosum ...	3	860	...	...	...	...	604	60,400
Vegetables ...	Tarkari ...	...	3,309	2,87,030	4,050	3,25,500	473	23,110	4,117	2,62,190
Miscellaneous ...	Lehsan ...	...	...	...	1,629	67,500	...	...	3,870	1,16,970
Fodder—										
Lucerne Grass ...	Lusan Ghas ...	Medicago sativa ...	1,007	40,250	4	100	...	...	230	14,540
Grass ...	Fenji ...	Co. Var. ...	...	...	25,364	5,07,280	27,623	5,35,400	104,380	31,91,400
Millets, etc. ...	Ghas ...	...	198	2,040	59	1,770	547	10,640	1,308	18,690
Sugarcane ...	Chawal ...	...	26,885	7,21,625	205,372	01,01,180	97,524	29,25,720	43,519	13,15,470
...	Maina ...	...	...	...	...	...	...	...	60	2,000
...	Ganna ...	Saccharum officinarum ...	82,810	1,88,70,646	5,409	11,62,936	10,088	22,97,920	53,054	1,00,45,418
...	Shafal ...	...	...	...	...	...	...	...	8	500
...	Methra ...	...	...	...	210	1,250	2,900	17,400	1	30
Miscellaneous ...	...	...	4	60	...	...	...	...	401	9,250
Fallows										
Single watering ...	...	...	837	...	8,111	...	4,485	...	1,852	...
Plantations ...	...	...	1,301	...	5,209	...	...	...	1,390	...
Miscellaneous ...	...	...	10,031	...	...	...	...	...	11,769	...
Waste of water ...	...	...	952	...	...	...	...	...	...	...
Palaver ...	...	...	728	...	...	...	...	...	...	...
GRAND TOTAL										
			849,016	6,89,41,124	695,908	7,43,26,308	539,460	2,02,10,583	1,235,634	6,23,79,551

E.

IRRIGATED IN THE PUNJAB DURING THE YEAR 1919-20.

LOWER BARI DOIN CANAL.		UPPER CHENAB CANAL.		LOWER CHENAB CANAL.		UPPER JHELUM CANAL.		LOWER JHELUM CANAL.		UPPER SUTLEJ INUNDATION CANALS (INCLUDING LOWER SONAH AND PARA CANALS).	
Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.
12	13	11	15	16	17	18	19	20	21	22	23
Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.
250,811	1,00,51,094	141,880	1,00,00,170	10,07,880	7,81,15,312	110,000	75,53,200	337,380	2,05,87,189	59,275	30,13,050
5,080	2,32,880	7,800	3,22,600	16,908	6,58,472	6,520	2,00,720	11,278	3,83,482	1,833	73,637
8,035	4,07,815	102,725	1,65,01,680	39,770	36,21,476	15,727	11,30,075	2,085	2,44,335	24,716	20,01,898
37,037	76,43,567	6,033	4,28,313	107,071	70,01,970	2,318	1,42,674	17,019	7,67,617	8,751	5,08,816
3,915	1,52,000	302	0,070	925	37,000	818	31,720	10,526	4,21,030	773	25,180
51	1,090	...	...	7,151	2,14,633	...	...	2	40	38,773	11,63,100
...	...	...	...	...	...	...	...	...	...	1,285	25,700
17,701	7,98,804	30,612	12,25,680	10,100	7,72,700	14,503	0,48,211	60,453	30,83,052	...	...
1,735	1,17,060	1,221	87,929	21,327	10,51,270	12,722	8,05,008	31,775	21,03,020	8,231	5,50,703
407	12,125	...	...	31	625	...	...	4	160	790	10,780
...
...	...	17	270	322	0,410	12	210	372	4,987	...	...
8,111	3,32,551	1,051	5,17,989	46,108	21,17,724	1,567	76,323	13,804	5,38,471	29,037	12,88,628
304	10,020	1,657	32,610	1,071	20,240	770	607	2,616	72,340	40	920
7,081	1,11,280	...	...	3,013	79,010	...	...	977	16,140	13	220
...	...	...	...	1	20	...	...	110	3,450	1	25
538	10,140	...	...	1,498	41,640	...	...	21	670	517	15,510
...	...	...	...	402	12,770	...	...	13	200	73	2,180
6,738	1,68,450	110	2,075	6,171	1,53,350	6	170	665	10,375	303	7,675
2,602	67,300	21	625	7,330	1,53,476	12	300	4,790	1,10,000	15,092	3,01,840
...	...	...	...	...	...	...	...	14	320	...	...
1,831	33,350	20	500	782	10,070	812	21,060	3,611	83,600	60	1,250
...	...	100	2,180	45	900	15	300	135	2,700	...	...
...	...	177	2,055	20,557	3,08,315	...	...	42	630	4,081	61,315
450	30,720	104	16,520	4,752	3,97,100	1,133	10,610	1,256	1,00,490	51	3,060
...
23	920	...	...	371	14,810	38	2,120	257	10,120	101	4,040
...	...	...	...	100	4,000	...	...	...	...	50	2,000
...	...	...	...	69	2,320	...	...	...	...	...	...
...	...	...	...	50	750	...	...	...	...	...	...
217,137	1,02,04,430	41,351	30,01,760	319,251	2,44,17,770	39,703	16,83,115	112,000	81,20,232	47,541	21,87,021
311	0,330	849	16,977	1,123	33,810	...	...	70	2,370	695	11,700
503	11,010	121	3,730	3,431	1,02,070	307	0,150	781	25,430	...	...
...	...	...	...	215	6,150	2	60	25	750	20	390
...
27	1,087	...	...	23	2,310	7	280	7	280	...	...
...	...	13	300	11	420	...	...	162	5,460	24	600
...	...	...	...	178	3,910	51	1,530	107	3,310	...	...
...	...	...	...	...	...	...	...	1	25	...	...
3,515	1,75,770	104	0,700	1,321	67,521	320	20,861	363	31,417	3,558	2,02,806
11,090	5,00,800	11,015	5,62,270	50,707	15,75,077	1,075	63,092	0,071	8,01,070	118	6,441
19,633	9,81,680	11,023	7,31,400	1,67,822	85,58,922	20,007	13,43,808	61,163	67,10,507	185	10,545
3,011	1,80,570	870	41,700	2,378	1,10,278	616	30,431	6,140	8,40,480	301	17,167
...	...	11	700	1,161	69,451	85	3,712	325	28,925	...	...
1,695	81,750	...	...	41	2,211	803	10,362	8	712	...	...
41	2,050	...	...	...	...	11	701	...	...	...	...
...
61	5,120	...	...	1,033	81,780	...	...	28	2,210	250	12,950
29,020	14,00,457	5,612	2,80,000	51,242	26,02,100	1,519	7,07,400	24,028	12,01,300	71	2,130
4	120	3	80	202	8,040	...	...	201	10,820	33	990
...	...	219	7,470	30	80	69	2,070	16	430	...	...
23,308	9,29,320	5,555	2,22,200	63,407	10,490	8,008	3,51,320	41,713	17,88,520	16,808	6,73,350
...	...	0	300	...	25,0280	...	...	...	...	...	...
81	8,100	261	20,103	4,241	4,26,100	27	2,700	2,005	2,00,500	282	28,200
099	60,000	...	...	400	49,000	...	...	...	...	20	2,000
1,876	1,25,400	807	62,700	7,198	5,07,020	612	37,010	2,001	1,40,580	80	5,400
516	10,380	...	...	203	0,090	...	...	...	...	...	...
...
2,278	1,13,000	275	18,750	23,197	11,69,959	171	8,700	2,026	1,01,500	21	1,200
12,631	3,81,630	10,161	4,81,830	121,570	36,47,670	2,410	72,190	12,340	3,70,470	1,238	36,840
8,259	67,710	1,692	45,000	5,035	1,51,050	10,071	3,20,220	4,020	1,47,570	17,607	1,76,070
28,083	7,00,190	...	...	161,113	45,33,890	...	...	...	...	48,603	14,57,780
...	...	6,745	1,08,025	21,496	6,10,976	280	7,000	8,031	1,30,025	1,227	31,675
4,327	0,12,520	0,573	11,20,014	60,070	85,64,472	8,780	0,07,120	5,201	0,29,321	...	...
103	6,150	...	...	753	37,050	017	45,550	7,492	3,74,500	2,872	1,00,040
6,188	1,53,450	4	100	3,813	60,072	20	735	154	4,550	413	10,325
...	...	4	80	302	0,010	123	2,500	223	4,500	1	20
717,150	3,82,00,883	518,803	3,80,07,810	2,439,014	15,01,06,582	203,650	1,03,07,207	807,071	4,90,50,155	333,416	1,47,25,872
...	...	1,202	...	3,080	...	...	...	...	...	...	...
8,207	...	19,171	...	5,450	...	2,081	...	5,150	...	...	...
2,817	...	37	...	85	...	343	...	158	...	116	...
2,850	...	...	...	...	...	...	...	123	...	...	...
...	...	...	...	...	...	...	...	1,603	...	...	...
...
725,020	3,82,00,085	531,103	3,80,07,810	2,417,261	15,01,06,588	205,803	1,03,07,207	814,425	4,90,50,155	333,533	1,47,25,872

STATEMENT OF QUANTITY AND VALUE OF CROPS IRRIGATED

NAME OF CROPS.			SIDDHAI CANAL		INDUR INUNDATION CANALS.		SHARHUR (IMPERIAL) INUNDATION CANALS.		GHAGGAR CANALS (BRITISH).	
English.	Vernacular.	Scientific.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.	Area assessed water-rates.	Estimated value.
1	2	3	24	25	26	27	28	29	30	31
			Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.	Acrea.	Rs.
Cereals—										
Wheat	Gelum	Triticum sativum	70,661	54,30,568	41,376	22,11,615	12,450	7,50,816	2,290	1,80,568
Barley	Joe	Hordium vulgare	2,357	1,03,709	1,697	74,248	178	6,052	149	9,058
Rice	Jhona	Oryza sativa	10,214	6,01,102	47,619	14,20,510	93	6,372	6,774	3,20,162
Maize	Makli	Zea mays	1,150	74,730	1	65	100	4,900	...	...
Oats	Jawi	Avena sativa	...	...	...	...	281	11,300	...	...
Mixed grain	Berra	...	...	...	...	...	...	...	...	...
Miscellaneous	...	...	570	1,140	3	60	...	...	1,644	40,320
Millets and Pulses—										
Great Millet	Jawar	Sorghum vulgare	10,701	4,38,741	24,522	6,78,616	4,101	2,18,731	25	950
Spilled Millet	Rajm	Panicum spicatum	1,127	1,03,494	11,901	8,00,205	881	60,112	17	627
Italian Millet	Kangni	Setaria italica	41	860	62	1,370	...	...	...	...
...	Mandwa	Elenchne coracana	812	18,210	49	1,227	...	...	...	...
...	Sawank	Pennisetum frumentaceum	838	17,000	1,619	38,000	7	149	...	...
Gram	Chana	Cicer arietinum	11,977	5,13,788	6,045	2,03,931	5,438	2,15,718	3,309	1,13,712
Lentil	Masur	Arrum lens	141	2,800	102	3,030	81	2,400	...	...
Peas	Rawan	Pisum sativum	3,103	81,015	...	...	...	...	...	...
...	Mattar	Phaseolus radiatus	872	11,440	3,025	07,625	...	...	...	...
...	Mash	Phaseolus mungo	2,190	70,620	3	120	...	...	...	...
...	Nung	Phaseolus aconitifolia	141	2,800	...	...	...	...	...	...
...	Moth	Cyamopsis psoraloides	703	4,425	1,700	42,725	4	100	...	...
Mixed grain	Guar	Panicum miliaceum	...	...	...	...	109	4,950	171	2,565
...	Berra	...	1,878	27,120	61	765	315	7,675	827	24,510
Miscellaneous	Chenna	...	...	...	...	...	...	...	...	...
...	Maddal	...	5,491	82,410	03	045	...	...	...	...
Drugs and Spices—										
Tobacco	Tamaku	Nicotiana glauca	506	21,700	018	73,440	62	4,080	44	2,640
Poppy	Post	Papaver somniferum	...	...	...	...	...	...	...	...
Alseed and Dill	Ajwain	Psychotria ajwain	...	...	...	...	...	...	...	...
Fennegreek	Methi	Trigonella foenum-graecum	...	...	...	...	...	...	...	...
Coriander	Dhaniya	Coriandrum sativum	93	3,020	2	85	1	40	...	...
Cumin	Zira	Coriandrum officinale	...	...	7	230	...	...	...	...
Turnerie	Haldi	Curcuma longa	...	...	2	100	...	...	...	...
Aniseed	Saunl	Pimpinella anisum	13	650	...	...	...	...	...	...
Miscellaneous	Kasni	...	...	...	...	...	...	...	...	...
Fibres—										
Cotton	Rai	Gossypium herbaceum	60,030	22,81,140	20,898	9,71,028	11,000	7,00,480	...	...
Rosela Hemp	San	Hibiscus cannabinus	...	...	...	...	...	...	...	...
Falso Hemp	Sanni	Crotalaria juncea	150	2,800	...	...	7	310	...	...
Miscellaneous	Manjiana	Saccharum munja	2	30	...	...	...	...	...	...
Dyes—										
Indigo	Nili	Indigofera tinctoria	315	10,350	2,163	87,280	...	...	...	...
Henna	Mehndi	Lawsonia alba	...	...	10	400	...	...	...	...
Safflower	Kassumba	Carthamus tinctorius	...	...	...	...	...	...	...	...
Miscellaneous	...	...	15	375	...	...	...	...	...	...
Oil-seeds—										
Gingelly or Sesame	Til	Sesamum indicum	2,962	1,31,634	387	22,070	31	2,730	...	...
Rape	Sarson	Brassica campestris	168	9,000	30	1,710	...	...	358	14,806
Do.	Toria	Do. (Var. toria)	...	...	...	...	20	1,780	...	...
Mixed Flax	Taramra	Eruga sativa	1,501	85,557	437	21,000	78	6,042	237	9,717
Miscellaneous	Alsi	Linum usitatissimum	...	...	...	...	3	267	...	...
Mixed grain	Toria and gram	...	1,740	82,180	...	...	...	...	...	...
Fruits and Vegetables—										
Orchards	...	...	...	...	...	...	...	...	...	...
Chillies	Mirch	Capcium annuum	180	13,020	865	26,950	47	3,350	...	...
Melons	Kharbuza	Cucumis melo	63	2,775	...	...	...	...	...	...
Carrots	Gajar	Daucus carota	...	...	41	1,435	1	30	...	...
Cress	Halum	Lepidium sativum	...	...	...	...	...	...	...	...
Onions	Piaz	Allium cepa	...	...	...	...	...	...	...	...
Turnips	Salgun	Brassica rapa	15,218	3,04,060	1,774	70,160	1,809	72,380	...	...
Water-nuts	Singhara	Trapa bicornis	...	...	...	...	...	...	...	...
Gardens	...	...	300	20,000	277	27,700	84	8,400	14	1,100
Potatoes	...	Solanum tuberosum	...	...	...	...	...	...	...	...
Vegetables	Alu	...	544	32,640	335	27,450	33	2,240	...	...
Miscellaneous	Tarkari	...	...	...	...	...	...	...	...	...
...	Lohsan	...	4	80	...	...	...	...	...	...
Fodder—										
Lucerne Grass	Lachan Ghas	Medicago sativa	...	...	...	...	2	100	...	...
Grass	Soni	Do. Var.	...	...	...	...	63	1,690	...	...
Millets, etc.	Ghas	...	329	3,290	03	1,020	6,994	2,08,920	...	...
...	Charhi	...	12,644	2,62,880	0,020	3,76,800	...	...	...	...
Sugarcane	Maina	Saccharum officinarum	980	1,63,400	57	9,120	11	1,331	...	...
...	Ganna	...	...	...	...	...	3	160	...	...
Miscellaneous	Shahtal	...	3,413	88,280	163	3,200	...	...	...	...
...	Methra	...	1,326	18,800	270	4,180	...	...	...	...
Fallows										
Single watering	...	...	241,703	1,10,58,070	183,461	73,71,723	44,622	24,07,935	14,032	7,44,015
Plantations	...	...	...	...	...	...	...	...	...	...
Miscellaneous	...	...	...	...	...	...	...	...	...	...
Waste of water	...	...	534	...	...	...	...	...	15	...
Palaver	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL										
			242,230	1,10,58,070	183,461	73,71,723	44,622	24,07,935	14,047	7,44,015

*Includes 12,035 acres assessed to

the Civil Department.

[illegible]

(a) Columns 6 and 7 exclude the "cultural area commanded" and "area at present proposed to be annually irrigated" by the Native States Branches of the Sirhind Canal.

(b) Includes 45,212 acres irrigated on the Native States Branches of the Sirhind Canal. Columns 6 and 7 exclude the agriculturable area commanded by and area at present proposed for irrigation on the Sirhind Canal.

(c)	Ditto	\$7,514	ditto	ditto
(c)	Ditto	\$7,514	ditto	ditto

Ditto	437,357	ditto	ditto
Ditto	437,357	ditto	ditto

[illegible]

(5)	Ditto	61,631	ditto	ditto.
(6)	Ditto	61,457	ditto	ditto

(g)	LiBrO 61,461	LiBrO	LiBrO.
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and 74.225 acres by the Sisco Branch, Western Junco Canal, in the Patiala State.

the Siran Branch, western summit corner, in the E. corner of the building	ditto	ditto.
ditto	ditto	ditto.

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**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
		WESTERN JUMNA CANAL INCLUDING SIRSA BRANCH.	Rs. A. P.	Rs. A. P.	
		OCCUPIER'S RATE.			
Irrigation Branch Notification No. 097-R. I., dated 30th June 1916.	I	Sugarcane	10 0 0	6 0 0	Crop.
	II	Rice and water-nuts	6 8 0	4 0 0	Do.
	III	Orchards, gardens, tobacco, poppy, drugs, vegetables, spices and melons.	5 8 0	8 8 0	Gardens and orchards per half-year; the rest per crop.
	III-A	Wheat	5 0 0	3 4 0	Crop.
Irrigation Branch Notification No. 81-R. I., dated 16th January 1920.	IV	Cotton, fibres, dyes, oil-seeds and all rabi crops except wheat, gram, masur, senji, masha and turnips.	4 0 0	2 8 0	Do.
	V	Chari and all kharif crops not otherwise specified	3 0 0	1 12 0	Do.
	VI	Gram, masur, senji, turnips, carrots and masha...	2 8 0	1 8 0	Do.
	VII	Crops grown on the "wadā" of a previous crop. Single watering before ploughing not followed by a canal irrigated or p in the same or next harvest.	1 4 0	0 12 0	Crop. Watering.
	VIII	Grass, village and District Board plantations:—			
		For any number of waterings in kharif season ..	1 4 0	0 12 0	Half-year.
		For one watering in rabi season	1 4 0	0 12 0	Do.
		For two or more waterings in rabi season ...	2 8 0	1 8 0	Do.
		LOWER CHAUTANG NALA CANAL.			
		OCCUPIER'S RATE.			
Irrigation Branch Notification No. 1631-I., dated 27th April 1900.	I	Sugarcane, rice and water-nuts	4 2 0	2 12 0	Crop.
	IV	Cotton, indigo and maize	2 8 0	1 10 8	Do.
	V	Other kharif crops	1 12 0	1 2 8	Do.
	VII	Special rate—Single watering before ploughing for rabi followed by a crop.	1 2 0	0 12 0	Do.
		SIRHIND CANAL.			
		ZONE I			
		<i>All lands irrigated by the British Branches of the Sirhind Canal with the exception of those situated in the Fazilka Tahsil of the Ferozepore District.</i>			
Irrigation Branch Notification No. 278-R. I., dated 21st December 1904.	I	Sugarcane	12 0 0	6 0 0	Crop.
	II	Rice, orchards, gardens, poppy, indigo, dyes, drugs and spices, water-nuts, maize, wheat, vegetables, except turnips.	5 4 0	2 10 0	Orchards and gardens per half-year; the rest per crop.
	III	Cotton, chillies, melons, tobacco, fibres, barley, oil-seeds, horse, senji, all non-fodder crops in kharif and rabi not specified.	4 0 0	2 0 0	Crop.
	IV	Bajra, jowar, chari, moth, mung, mash, guar, chana, masur, gram, turnips, peas, and all kharif and rabi fodder crops not specified	3 4 0	1 10 0	Do.
Irrigation Branch Notifications No. 624-R. I., dated 12th May 1918, and No. 6102-R. I., dated 11th July 1919.	V	Watering for ploughing not followed by any crop in the same or succeeding harvest:— (a) For any number of waterings between 1st May and 15th July. (b) For any number of waterings after 15th July	0 8 0 1 8 0	0 4 0 0 12 0	Acre. Do.
		Also crops grown on the "wadā" of a previous crop.	1 8 0	0 12 0	Crop.
	VI	Special rates which may be made applicable to channels selected by the Local Government— A single watering before ploughing followed by a rabi crop.	2 4 0	1 2 0	

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per
			Flow.	Lift.	
			RS. A. P.	RS. A. P.	
		SIRHIND CANAL—CONCLUDED.			
		ZONE II.			
		<i>All lands irrigated by the British Branches of the Sirhind Canal in the Fazilka Tehsil of the Ferozepore District.</i>			
Irrigation Branch Notification No. 273-R. I., dated 21st December 1904.	I	Sugarcane	10 0 0	5 0 0	Crop.
	II	Rice, orchards, gardens, poppy, indigo, dyes, drugs and spices, water-nuts, maize, wheat, vegetables (except turnips)	5 0 0	2 8 0	Orchards and gardens per half-year; the rest per crop.
	III	Cotton, chilies, melons, tobacco, fibres, barley, oil-seeds, borra, sonji, all non-fodder crops in kharif and rabi not specified.	3 12 0	1 14 0	Crop.
	IV	Bajra, jowar, chhari, moth, mung, mash, guar, china, masur, gram, turnips, peas, and all kharif and rabi fodder crops not specified.	3 0 0	1 8 0	Do.
Irrigation Branch Notifications No. 624-R. I., dated 12th May 1918, and No. 610-R. I., dated 11th July 1919.	V	Watering for ploughing not followed by any crop in the same or succeeding harvest :—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		Also crops grown on the "wadhi" of a previous crop.	1 8 0	0 12 0	Crop.
		<i>All lands irrigated by other than the British Branches of the Sirhind Canal.</i>			
Irrigation Branch Notification No. 6818-I., dated 27th November 1898.	I	Sugarcane, rice, water-nuts	7 8 0	5 0 0	Crop.
	II	Gardens, orchards, tobacco, poppy, vegetables, indigo, maize.	4 8 0	3 0 0	Do.
	III	Cotton, fibres, all dyes (except indigo), all rabi crops (except gram and masur).	3 12 0	2 8 0	Do.
Irrigation Branch Notification No. 109-R. I., dated 16th January 1920.	IV	Chari, all kharif crops not specified above and rabi crops of gram and masur.	2 10 0	1 12 0	Do.
Irrigation Branch Notifications No. 624-R. I., dated 12th May 1918, and No. 6102-R. I., dated 11th July 1919.	V	Watering for ploughing not followed by any crop in the same or succeeding harvest :—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
	VI	Special rate which may be made applicable to channels selected by the Local Government :—			
		A single watering before ploughing for rabi followed by a rabi crop.	1 8 0	1 0 0	Crop.
		UPPER BARI DOAB CANAL.			
		OCCUPIER'S RATE.			
Irrigation Branch Notification No. 2621-I., dated 16th June 1891.	I	Sugarcane and water-nuts	7 1 0	3 8 0	Crop.
	II	Rice	6 0 10	3 0 5	Do.
	III	Orchards and gardens, tobacco, poppy and other drugs, vegetables, melons.	4 8 8	2 4 4	Orchards and gardens per half-year; the rest per crop.
	IV	All dyes, fibres and oilseeds, all rabi crops except gram and masur.	3 12 6	1 14 8	Crop.
Irrigation Branch Notification No. 85-R. I., dated 16th January 1920.	V	Chari and all kharif crops not otherwise specified, rabi crops of gram and masur and all fodder crops.	2 12 5	1 0 2½	Do.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
Irrigation Branch Notification No. 02-R. I., dated 21st May 1918.	VI	UPPER BARI DOAB CANAL—CONTINUED.			
		OCCUPIER'S RATE—continued.			
		Special rates which may be made applicable to following channels selected by the Local Government:—	2 0 4	1 0 2	Crop.
		<i>A single watering before ploughing for rabi followed by a rabi crop.</i>			
		Division.			
		Name of channel.			
		<i>Main Line.</i>			
		Salampur Feeder.			
		Faridnagar Feeder.			
		Sujanpur Mill Channel			
	First ...	Sarna Distributary.			
		Gulpur Distributary.			
		Dinanagar Navigation Channel including Awank Distributary.			
		Bhatoia Distributary.			
		Nannunangal Distributary.			
		Nannunangal Mill Channel.			
		Ghazikot Distributary.			
		<i>Main Line, Upper.</i>			
		Babohali Distributary.			
		Fatehnangal Distributary.			
	First ...	Rania Distributary.			
		Kot Karam Chand Distributary.			
		Kunjar Distributary.			
		Fat. hgarh Distributary.			
	Second	Kotla Distributary.			
		Thariewal Distributary.			
		<i>Kasur Branch.</i>			
	Fourth	Jandiala Distributary.			
		Talawan Distributary.			
		Naunch Distributary.			
		<i>Sabraon Branch.</i>			
		Rearki Distributary.			
		Aithal Distributary.			
		Vadala Distributary.			
		Dhardeo Distributary.			
		Gaggarbhana Distributary.			
		Bhinder Distributary.			

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
			RS. A. P.	RS. A. P.	
		UPPER BARI DOAB CANAL—CONCLUDED.			
		<i>OCCUPIER'S RATE—concluded.</i>			
Irrigation Branch Notifications No. 628-R. I., dated 12th May 1913, and No 0106-R. I., dated 11th July 1919.	VII	Watering for ploughing not followed by any crop in the same or succeeding harvest :—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		Crops grown on the "wadā" of a previous crop	1 0 2	0 8 1	Crop.
Irrigation Branch Notifications No. 849-R. I., dated 26th March 1907, No. 698-R. I., dated 11th December 1907, and No 030-R. I., dated 2nd July 1908.	VIII	Village plantations on areas to which the provisions of Act III of 1893 have been extended and District Board plantations within the Chunian Colony :—			
		For any number of waterings in the kharif season.	1 3 4	0 9 8	Half-year.
		For one watering in rabi season ...	1 3 4	0 9 8	Do.
		For two or more waterings in rabi season ...	2 11 7	1 6 0	Do.
		LOWER BARI DOAB CANAL.			
		<i>OCCUPIER'S RATE.</i>			
Irrigation Branch Notification No. 547-R. I., dated 23rd April 1913.	I	Cane and water-nuts ...	9 0 0	4 8 0	Crop.
	II	Rice ...	7 8 0	3 12 0	Do.
	III	Orchards, gardens, tobacco, poppy, indigo, drugs, vegetables, melons and wheat.	5 0 0	2 8 0	Orchards and gardens per half-year; rest per crop.
	IV	Cotton, fibres, dyes (other than indigo), oilseeds and all rabi crops, except wheat, gram, masur, senji, maina and turnips.	4 0 0	2 0 0	Crop.
Irrigation Branch Notification No. 101-R. I., dated 16th January 1920.	V	Chari and all kharif crops not otherwise specified	3 0 0	1 8 0	Do.
	VI	(a) Gram, masur, senji, turnips and maina ...	2 4 0	1 2 0	(a) Crop, (b) and (c) acre.
		(b) Crops grown on the "wadā" of a previous crop.			
		(c) Single watering before ploughing for rabi followed by a rabi crop to be applicable only to channels selected by the Local Government.			
Irrigation Branch Notification No. 0126-R. I., dated 11th July 1919.	VII	Grass, village and District Board plantations :—			
		For any number of waterings in kharif season.	1 4 0	0 10 0	Half-year.
		For one watering in rabi season ...	1 4 0	0 10 0	Do.
		For two or more waterings in rabi season ...	2 8 0	1 4 0	Do.
	VIII	Watering for ploughing not followed by any crop in the same or succeeding harvest :—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		(c) Hemp (saa) and indigo which has been ploughed in as green manure before the 15th September.	0 8 0	0 4 0	Do.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
UPPER CHENAB CANAL.					
OCCUPIER'S RATE.					
Irrigation Branch Notification No. 0228-B. I., dated 8th August 1912.	I	Cane and water-nuts	9 0 0	4 8 0	Crop.
	II	Rice	7 8 0	3 12 0	Do.
	III	Orchards, gardens, tobacco, poppy, indigo, drugs, vegetables, melons and wheat.	5 0 0	2 8 0	Orchards and gardens per half-year; rest per crop.
	IV	Cotton, fibres, dyes (other than indigo), oilseeds and all rabi crops, except wheat, gram, masur, senji, maina and turnips.	4 0 0	2 0 0	Crop.
Irrigation Branch Notification No. 97-R. I., dated 16th January 1920.	V	Chari and all kharif crops not otherwise specified.	3 0 0	1 8 0	Do.
	VI	(a) Gram, masur, senji, turnips and maina ... (b) Crops grown on the "wadk" of a previous crop. (c) Single watering before ploughing for rabi followed by a rabi crop to be applicable only to following channels selected by the Local Government—	2 4 0	1 2 0	(a) Crop, (b) and (c) acre.
Irrigation Branch Notification No. 0243-R. I., dated 20th September 1918.		<i>On Main Line, Upper.</i>			
		Nokhar Branch.			
		Raya Branch.			
		<i>On Main Line, Lower.</i>			
		Talwandi.			
		Gufrawala.			
		Kamoki.			
		Metuwala.			
		Joianwala.			
		Khanpur.			
Irrigation Branch Notifications No. 55-B. I., dated 13th January 1918 and No. 0118-R. I., dated 11th July 1919 and No. 284-R. I., dated 12th March 1920.		Sikhanwala.			
		Udyere.			
		Khakh.			
		Maddar.			
		Mangalari Minor of the Sayadwala Distributary.			
	VII	Grass, village and District Board plantations—			
		For any number of waterings in the kharif season.	1 4 0	0 10 0	Half-year.
		For one watering in rabi season ...	1 4 0	0 10 0	Do.
		For two or more waterings in rabi season ...	2 8 0	1 4 0	Do.
	VIII	Watering for ploughing not followed by any crop in the same or succeeding harvest:—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		(c) Hemp (san), indigo and gwara which have been ploughed as green manure before the 15th September.	0 8 0	0 4 0	Do.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.												
			Flow.	Lift.													
		LOWER CHENAB CANAL.	Rs. A. P.	Rs. A. P.													
		OCCUPIER'S RATE.															
		1. Applicable to—															
		(a) all estates in the Gujranwala District which were established before the 1st January 1892;															
		(b) all estates in the Jhang District which were established before 1st January 1892, except those which were transferred from the Montgomery to the Jhang District by Revenue and Agriculture Notification No. 370 of 4th May 1899; and such proprietary wells as are now or may hereafter be included within the boundaries of the Colony manzars;															
		(c) all estates in the Gujara and Montgomery Tahsils of the Montgomery District which were established by 1st January 1894; and															
		(d) all estates in the Mullan and Lahore Districts which were established before 1st April 1902.															
Irrigation Branch Notification No. 017-R.I., dated 13th June 1903.	I	Sugarcane and water-nuts	8 0 0	4 4 0	Crop.												
	II	Rice	6 12 0	3 10 0	Do.												
	III	Orchards, gardens, tobacco, poppy, indigo, drugs, vegetables and melons.	5 8 0	3 0 0	Orchards and gardens per half-year; the rest per crop.												
	IV	Cotton, fibres, dyer (other than indigo), oil-seeds, maize and all rabi crops (except gram and masur).	4 4 0	2 6 0	Crop.												
Irrigation Branch Notification No. 93-R.I., dated 16th January 1910.	V	Charai, all kharif crops not otherwise specified, and gram and masur	3 0 0	1 12 0	Do.												
	VI	Watering for ploughing not followed by any crop in the same or succeeding harvest:—															
Irrigation Branch Notifications No. 680 R.I., dated 12th May 1913, and No. 0114-R.I., dated 11th July 1919.		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.												
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.												
		Also crops grown on the "wadhi" of a previous crop	1 12 0	1 2 0	Crop.												
	VII	Single watering before ploughing for rabi followed by a rabi crop, to be applicable only to channels selected by the Local Government.	2 4 0	1 6 0	Acre.												
		The channels selected under this class VII are—															
		<table><tr><th>Authority.</th><th>Name of Division.</th><th>Name of channel.</th></tr><tr><td>Punjab Irrigation Branch Notification No. 0100-R.I., dated 11th September 1901.</td><td>Khanki Division.</td><td>Yanki Distributary, Gajar Gola Distributary.</td></tr><tr><td>Punjab Irrigation Branch Notification No. 020-R.I., dated 18th June 1903.</td><td>Lyallpur Division.</td><td>Chak Baha Branch of the Noon Distributary and Shah Bahai Minor of the same.</td></tr><tr><td>Punjab Irrigation Branch Notification No. 95-R.I., dated 19th February 1904.</td><td>Khanki Division.</td><td>Maradian Distributary, Jagganwala Distributary, Sagar Distributary.</td></tr></table>	Authority.	Name of Division.	Name of channel.	Punjab Irrigation Branch Notification No. 0100-R.I., dated 11th September 1901.	Khanki Division.	Yanki Distributary, Gajar Gola Distributary.	Punjab Irrigation Branch Notification No. 020-R.I., dated 18th June 1903.	Lyallpur Division.	Chak Baha Branch of the Noon Distributary and Shah Bahai Minor of the same.	Punjab Irrigation Branch Notification No. 95-R.I., dated 19th February 1904.	Khanki Division.	Maradian Distributary, Jagganwala Distributary, Sagar Distributary.			
Authority.	Name of Division.	Name of channel.															
Punjab Irrigation Branch Notification No. 0100-R.I., dated 11th September 1901.	Khanki Division.	Yanki Distributary, Gajar Gola Distributary.															
Punjab Irrigation Branch Notification No. 020-R.I., dated 18th June 1903.	Lyallpur Division.	Chak Baha Branch of the Noon Distributary and Shah Bahai Minor of the same.															
Punjab Irrigation Branch Notification No. 95-R.I., dated 19th February 1904.	Khanki Division.	Maradian Distributary, Jagganwala Distributary, Sagar Distributary.															

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20 - CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.																			
			Flow.	Lift.																				
Irrigation Branch Notification No. 0141-R.I., dated 12th October 1903.	VIII	LOWER CHENAB CANAL.—CONTINUED.	Rs. A. P.	Rs. A. P.																				
		OCCUPIER'S RATE—continued.																						
		Grass :— For any number of waterings in the kharif season,	1 4 0	0 10 0	Half-year.																			
		For one watering in the rabi season	1 4 0	0 10 0	Do.																			
		For two or more waterings in the rabi season	2 8 0	1 4 0	Do.																			
Irrigation Branch Notification No. 32-I., dated 6th January 1892.	I	Sugarcane	7 8 0	3 12 0	Crop.																			
	II	Rice	6 4 0	3 2 0	Do.																			
	III	Orchards, gardens, tobacco, indigo, vegetables, poppy, dhania, zira, saunf, melons.	5 0 0	2 8 0	Orchards and gardens per half-year; the rest per crop.																			
	IV	Cotton, fibres, dyes (other than indigo), oil-seeds, maize and all rabi crops (except gram and masur).	3 12 0	1 14 0	Crop.																			
	V	Chari, all kharif crops not otherwise specified and gram and masur.	2 8 0	1 4 0	Crop.																			
	VI	(i) Watering for ploughing not followed by any crop in the same or succeeding harvest :— (a) For any number of waterings between 1st May and 16th July.	0 8 0	0 4 0	Acre.																			
		(b) For any number of waterings after 16th July.	1 8 0	0 12 0	Do.																			
		(ii) Also crops grown on the "wadhi" of a previous crop.	1 4 0	0 10 0	Crop.																			
		VIII	Grass, village plantations in Colony villages and District Board plantations in the Colony :— For any number of waterings in the kharif season.	1 4 0	0 10 0	Half-year.																		
	For one watering in the rabi season		1 4 0	0 10 0	Do.																			
For two or more waterings in the rabi season	2 8 0		1 4 0	Do.																				
3. Applicable from kharif 1911 to such estates as may be selected by the Local Government and from among those irrigated from the Lower Chenab Canal to which the rates published in Notification No. 32-I., dated 6th January 1892, are applicable.																								
Irrigation Branch Notification No. 112-R.I., dated 30th January 1912.	IV	Cotton, fibres, dyes (other than indigo), oil-seeds, maize and all rabi crops except gram and masur.	3 0 0	1 12 0	Crop.																			
	V	Chari, all kharif crops not otherwise specified and gram and masur.	2 0 0	1 4 0	Do.																			
Irrigation Branch Notification No. 93-R.I., dated 16th January 1920.		List of estates selected by the Local Government under Notification No. 112-R. I., dated 30th January 1912.																						
		<table><tr><th>Division.</th><th>District.</th><th>Settlement, assessment circle.</th><th>Nos. of Chals and Branch.</th></tr><tr><td>Upper Gugera.</td><td>Gujranwala</td><td>Gugera Branch I.</td><td>537, 538 and 539, Gugera Branch.</td></tr><tr><td>Lower Gugera</td><td>Lyalpur...</td><td>Ditto</td><td>71 and part of 75 and 164, Gugera Branch.</td></tr><tr><td rowspan="2">Lyalpur</td><td>Lyalpur..</td><td>Jhang Branch I.</td><td>107 and half of 25, Jhang Branch.</td></tr><tr><td>Jhang ...</td><td>Ditto</td><td>129, 136, 137, 141, 144, 145, 153, 154, 156 and 167, Jhang Branch.</td></tr></table>	Division.	District.	Settlement, assessment circle.	Nos. of Chals and Branch.	Upper Gugera.	Gujranwala	Gugera Branch I.	537, 538 and 539, Gugera Branch.	Lower Gugera	Lyalpur...	Ditto	71 and part of 75 and 164, Gugera Branch.	Lyalpur	Lyalpur..	Jhang Branch I.	107 and half of 25, Jhang Branch.	Jhang ...	Ditto	129, 136, 137, 141, 144, 145, 153, 154, 156 and 167, Jhang Branch.			
	Division.	District.	Settlement, assessment circle.	Nos. of Chals and Branch.																				
	Upper Gugera.	Gujranwala	Gugera Branch I.	537, 538 and 539, Gugera Branch.																				
	Lower Gugera	Lyalpur...	Ditto	71 and part of 75 and 164, Gugera Branch.																				
Lyalpur	Lyalpur..	Jhang Branch I.	107 and half of 25, Jhang Branch.																					
	Jhang ...	Ditto	129, 136, 137, 141, 144, 145, 153, 154, 156 and 167, Jhang Branch.																					

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops	RATE PER ACRE.		Per.																																																																					
			Flow.	Lift.																																																																						
		LOWER CHENAB CANAL.—CONTINUED.	Rs. A. P.	Rs. A. P.																																																																						
		OCCUPIER'S RATE--concluded																																																																								
		List of estates selected by the Local Government—concluded.																																																																								
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Irrigation Branch Notification No. 087-R.L., dated 8th June 1916.	I	Cane and water-nuts	9 0 0	4 8 0	Crop.																																																																					
	II	Rice	7 8 0	3 12 0	Do.																																																																					
	III	Orchards, gardens, tobacco, puppy, indigo, drugs, vegetables, melons and wheat.	5 0 0	2 8 0	Orchards and gardens per half-year; rest per crop.																																																																					
	IV	Cotton, fibres, dyes (other than indigo), oil-seeds and all rabi crops except wheat, gram, masur, senji, maina and turnips.	4 0 0	2 0 0	Crop.																																																																					

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20 CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
Irrigation Branch Notification No. 105 R.I., dated 18th January 1920.		UPPER JHELUM CANAL—CONCLUDED.	Rs. A. P.	Rs. A. P.	
		OCCUPIER'S RATE—concluded.			
	V	Chari and all kharif crops not otherwise specified	3 0 0	1 8 0	Crop.
	VI	(a) Gram, masur, senji, turnips and muna ...			(a) Crop.
		(b) Crops grown on the "wadā" of a previous crop.			(b) Acre.
		(c) Single waterings before ploughing for rabi followed by a rabi crop to be applicable only to the following channels:—			(c) Do.
		11-R. or Machiana Kharif Distributary.			
		12-R. or Samanpindi Kharif Distributary.			
		13-R. or Saroki Kharif Distributary.	2 4 0	1 2 0	
		14-R. or Phalia Kharif Distributary.			
Irrigation Branch Notification No. 0122-R.I., dated 11th July 1919.		Main Line, Upper Jhelum Canal.			
		Gujrat Branch, Upper Jhelum Canal.			
		2-L. or Phalia Dushaka Kharif Distributary.			
		These channels will be open only between the 1st April and 15th October, both dates inclusive.			
	VII	Grass, village and District Board plantations:—			
		For any number of waterings in the kharif season	1 4 0	0 10 0	Half-year.
		For one watering in rabi season ...	1 4 0	0 10 0	Do.
		For two or more waterings in rabi season ...	2 8 0	1 4 0	Do.
	VIII	Watering for ploughing not followed by any crop in the same or succeeding harvest—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
Irrigation Branch Notification No. 07-R.I., dated 29th May 1902.		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		(c) Hemp (gan) and indigo which have been ploughed as green manure before the 15th September.	0 8 0	0 4 0	Do.
		LOWER JHELUM CANAL.			
		OCCUPIER'S RATE.			
	I	Sugarcane and water-nuts ...	10 0 0	5 0 0	Crop.
	II	Rice ...	6 4 0	3 2 0	Do.
	III	Orchards, gardens, tobacco, indigo, vegetables, drugs, poppy and melons.	5 0 0	2 8 0	Orchards and gardens per half year; the rest per crop
	IV	Cotton, fibres, dyes (other than indigo), oil-seeds, maize and all rabi crops except gram and masur.	3 12 0	1 11 0	Crop.
	V	Chari, all other kharif crops, gram and masur, and all crops grown for fodder.	2 8 0	1 4 0	Do.
	VI	Watering for ploughing not followed by any crop in the same or succeeding harvest:—			
Irrigation Branch Notifications No. 032-R.I., dated 12th May 1913, and No. 0110-R.I., dated 11th July 1919.		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		Crops grown on the "wadā" or moisture of a previous crop.	1 4 0	0 10 0	Crop.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		For.
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
		LOWER JHELUM CANAL—CONTINUED.			
		OCCUPIER'S RATE—continued.			
Irrigation Branch Notifications No. 6121-R.I., dated 21st September 1903, No. 810-R.I., dated 19th December 1905, and No. 695-R.I., dated 11th December 1907.	VII	Single watering before ploughing for rabi followed by a rabi crop, to be applicable only to channels selected by the Local Government.	2 8 0	1 4 0	Crop.
	VIII	Grass, village plantations in Colony villages and District Board plantations in the Colony:—			
		For any number of waterings in the kharif season.	1 4 0	0 10 0	Half-year
		For one watering in the rabi season ...	1 4 0	0 10 0	Do.
		For two or more waterings in the rabi season ..	2 8 0	1 4 0	Do.
Irrigation Branch Notifications No. 408-R.I., dated 20th March 1912, and No. 433-R.I., dated 3rd April 1912.		<i>Applicable to:—</i>			
		(1) All villages or portions of villages in the Bhera Tahsil irrigated from the Khadir Feeder or Khadir Distributary.			
		(2) All villages in the Shahpur Tahsil, except Sher Muhammadwala and Hagoval and except all villages or portions of villages irrigated from the Sahiwal Feeder including the Sahiwal Distributary and Gondal Distributary.			
		(3) The following villages in the Sargodha Tahsil:—			
		Northern Branch Chaks:—			
		Nos. 93, 94, 95, 103, 104, 105, 106, 110, 112, 115 to 174 inclusive.			
		Southern Branch Chaks:—			
		Nos. 60, 61, 63, 131, 133, 134, 135, 137 to 141 inclusive and Chak Jodh on the Khadir Distributary.			
	I	Sugarcane and water-nuts	7 8 0	3 12 0	Crop.
	II	Rice	4 0 0	2 0 0	Do.
Irrigation Branch Notification No. 89 R. I., dated 16th January 1920.	III	Orchards, gardens, indigo, vegetables, drugs and melons.	5 0 0	2 8 0	Orchards and gardens per half-year; the rest per crop.
	IV	Wheat	3 4 0	1 10 0	Crop.
	V	Cotton and oilseeds	3 0 0	1 8 0	Do.
	VI	Fibres (other than cotton), dyes (other than indigo), maize and all rabi crops other than wheat, gram and masur.	2 8 0	1 4 0	Do.
	VII	Chari, all other kharif crops, gram, masur and all crops grown for fodder (including turnips).	2 0 0	1 0 0	Do.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
Irrigation Branch Notification No. 832-R. I., dated 12th May 1919, and No. 0110-R. I., dated 11th July 1919		LOWER JHELM CANAL—CONCLUDED.			
		OCCUPIER'S RATE—concluded.			
	VIII	Watering for ploughing not followed by any crop in the same or succeeding harvest:—			
		(a) For any number of waterings between 1st May and 15th July.	0 8 0	0 4 0	Acre.
		(b) For any number of waterings after 15th July.	1 8 0	0 12 0	Do.
		Crops grown on "wadā" or moisture of a previous crop.	1 4 0	0 10 0	Crop.
	IX	Single watering before ploughing for rabi followed by a rabi crop, to be applicable only to channels selected by the Local Government.	2 8 0	1 4 0	Crop.
	X	Grass, village plantations in Colony villages and District Board plantations in the Colony—			
		For any number of waterings in the kharif season.	1 4 0	0 10 0	Half-year
		For one watering in the rabi season ...	1 4 0	0 10 0	Do.
Irrigation Branch Notification No. 409-R. I., dated 17th April 1918.		For two or more waterings in the rabi season.	2 8 0	1 4 0	Do.
		UPPER SUTLEJ INUNDATION CANALS INCLUDING LOWER SOHAG AND PARA CANALS.			
		OCCUPIER'S RATE.			
		<i>Lahore and Montgomery Districts.</i>			
	I	Rice, gardens, pepper and cane ...	3 8 0	1 12 0	Acre.
	II	Cotton, melons, til and hemp ...	2 12 0	1 6 0	Do.
	III	All other kharif crops ...	1 12 0	0 14 0	Do.
	IV	Grasses and failed rabi crops ...	0 8 0	0 4 0	Do.
	V	All other crops ...	1 4 0	0 10 0	Do.
		SIDHNALI CANALS.			
Punjab Civil (Revenue) Department letter No. 289 dated 11th December 1899.		WATER RATE.			
		<i>Kabirwala and Multan Tahsils</i>			
	I	Rice, fruits and vegetables, pepper, cotton, til, sugarcane, wheat and tobacco.	3 5 0		
	II	Other kharif crops ...	2 6 0		
	III	Other rabi crops ...	2 2 0		
		NOTE.—"Lift" rates to be half the "flow" rates.			

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
LOWER SUTLEJ INUNDATION CANALS.					
OCCUPIER'S RATE.					
<i>Multan District.</i>					
<i>Mailsi Canals and Branches; Muhammadwah-Sardarwah and Branches; Bahawalwah, Lodhran and Branches.</i>					
Irrigation Branch Notification No. 58-R. I., dated 14th February 1908.	I	Rice, gardens and pepper ...	2 4 0	1 11 0	Acre of matured crop.
	II	Cotton, sugarcane and til ...	1 12 0	1 5 0	Ditto.
	III	Other kharif crops ...	1 8 0	1 2 0	Ditto.
	IV	Rabi crops ...	0 14 0	0 10 0	Ditto.
NOTE.—Irrigation on grass land may be assessed at half rabi rates at the discretion of the Deputy Commissioner.					
CHENAB INUNDATION CANALS.					
OCCUPIER'S RATE.					
<i>Gaffuhatla, Sikandarabad, Silandarwah and Bilochanwah Canals.</i>					
Irrigation Branch Notification No. 2186 I., dated 9th November 1899.	I	Rice, gardens and pepper ...	2 4 0	1 11 0	Acre of matured crop.
	II	Cotton, sugarcane and til ...	1 12 0	1 5 0	Ditto.
	III	Other kharif crops ...	1 8 0	1 2 0	Ditto.
	IV	Rabi crops ...	0 14 0	0 10 0	Ditto.
NOTE.—Irrigation on grass lands may be assessed at half rabi rates at the discretion of the Deputy Commissioner.					
<i>Mattihal, Daurana, Langana and Waki Muhammad Canals.</i>					
Irrigation Branch Notification No. 01522 I., dated 25th September 1900.	I	Rice, gardens and pepper ...	2 4 0	1 11 0	Acre of matured crop.
	II	Cotton, sugarcane and til ...	1 12 0	1 5 0	Ditto.
	III	Other kharif crops ...	1 8 0	1 2 0	Ditto.
	IV	Rabi crops ...	0 14 0	0 10 0	Ditto.
NOTE.—Irrigation on grass lands may be assessed at half rabi rates at the discretion of the Deputy Commissioner.					
HABIWAH CANAL.					
Irrigation Branch Notification No. 2 6-R. I., dated 15th November 1905.	In exercise of the power conferred by Section 29 (1) of the Punjab Minor Canals Act, 1915 (Punjab Act, III of 1905), His Honour the Lieutenant-Governor is pleased to direct that for all irrigation from the Habiwah Canal the following rates shall be levied per acre actually matured, namely:—				
	WATER RATE				
	I	Rice, gardens and pepper ...	2 4 0	1 11 0	
	II	Cotton, sugarcane and til ...	1 12 0	1 5 0	

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1910-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
		HAJIWAH CANAL.—CONCLUDED.			
		WATER RATE—concluded.			
	III	Other kharif crops	1 8 0	1 2 0	-
	IV	Rabi crops	0 14 0	0 10 0	-
		Provided that on all irrigations within the original grant of land made in the year 1880 to the late Ghulam Kadir Khan, of lands, the proprietary right in which is or may hereafter become vested:—			
		(a) in the sons or lineal descendants of the said Ghulam Kadir Khan; or			
		(b) in Mian Muhammad Khan or Hafiz Muhammad Afzal Khan, the nephews of the said Ghulam Kadir Khan or their lineal descendants;			
		the rate per acre actually matured whether in the kharif or rabi shall be limited to the following rates, namely:—			
		Rs. A. P.			
		Flow 0 12 0 per acre.			
		Lift 0 9 0 „			
Irrigation Branch Notification No. 289-R. I., dated 15th November 1905.		In exercise of the power conferred by Section 29 (1) of the Punjab Minor Canals Act (Punjab Act III of 1905), the Lieutenant-Governor is pleased to direct that the following rates shall be levied on the Hajiwah Canal in the Multan and Montgomery Districts, for the supply of water for purposes other than irrigation, viz:—			
		Purpose for which supplied.	Rate.		
			Rs. A. P.		
		Brick-making and pier wall building ...	0 3 0		100 cubic feet.
		Laying concrete or brick or stone masonry ...	0 2 0		Ditto.
		Metalling road	10 0 0		Mile.
		Water supplied in bulk	1 0 0		2,500 cubic feet.
Irrigation Branch Notification No. 285-R. I., dated 19th September 1905.		Watering roadside or avenue trees ...	2 8 0		Canal mile of 5,000 feet for kharif crop.
			5 0 0		Canal mile of 5,000 feet for rabi crop.
Irrigation Branch Notification No. 106-R. I., dated 30th January 1912.		Proviso.—Except within the limits of Civil Stations, Cantonments and Municipalities no charge shall be made for water used for the manufacture of bricks not subsequently burnt in a kiln or for pier wall building if taken from a water course or tank lawfully supplied from a canal, and no rate shall be levied for water supplied in bulk under proper authority to village tanks exclusively used for domestic purposes or for watering cattle.			

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow	Lift.	
			Rs. A. P.	Rs. A. P.	
Irrigation Branch Notification No. 0876-B. I., dated 2nd October 1912.		INDUS INUNDATION CANALS.	RATE PER ACRE.		
		OCCUPIER'S RATE.	On the Kadra Canal.	On all other canals.	
			Rs. A. P.	Rs. A. P.	
	I	Kharif flow	1 8 0	1 0 0	
		" lift	0 12 0	0 8 0	
	II	Rabi flow	0 12 0	0 8 0	
		" lift	0 6 0	0 4 0	
		Special rate for rice in the Dera Ghazi Khan and Jampur Tahsils:—	...	1 4 0	
		Provided that all lands irrigated from the Masswah Canal lying in the villages of Rori and Bet Ladha shall be entirely exempt from all occupier's rates and that all lands irrigated from the said canal lying in the villages of Mari Pachadi and Mari Damiyani shall be subject to only half of the above-mentioned occupier's rate.			
		Provided also that when irrigation is done by canal and torrent or canal and river flood water mixed and would have been done in any case without the aid of the canal, occupier's rates shall not be charged in respect of such irrigation. When, however, torrent or river flood waters are carried by the canal and managed and distributed as part of the canal supply, the above-mentioned occupier's rates shall be charged in respect of any irrigation done by such waters.			
Irrigation Branch Notification No. 0849-B. I., dated 4th October 1915.		In exercise of the powers conferred by Section 75 of the Northern India Canal and Drainage Act, VI I of 1878, as amended by Act IV of 1914, the Lieutenant Governor of the Punjab is pleased to direct the publication of the following Schedule of Rates to be charged for irrigation from the Dera Ghazi Khan High Level Supply Channel, taking out from the Manka Canal of the Indus Inundation Canals Series and for the supply of water for purposes other than irrigation:—	Rs. A. P.		
		All crops	6 0 0		Acre.
		Miscellaneous rates for purposes other than irrigation			
		Brick-making and pipe wall building ...	0 8 0		100 cubic feet.
		Laying concrete and brick or stone masonry ..	0 2 0		Ditto.
		Metalling roads	10 0 0		Mile.
		Water supplied in bulk	1 0 0		2,500 cubic feet.
		Watering roadside or avenue trees	5 0 0		Canal mile of 5,000 feet per crop.
		SHAHPUR (IMPERIAL) INUNDATION CANALS.			
		OCCUPIER'S RATE			
	For the Canals in Shahpur and Bhera Tahsils.				
Irrigation Branch Notification No. 1879-L., dated 19th November 1894.			Rs. A. P.	Rs. A. P.	
		Rice	3 8 0	1 4 0	Acre.
		All other crops	2 8 0	1 4 0	Do.
		Grass lands	1 4 0	1 4 0	Do.

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919-20—CONTINUED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
			Rs. A. P.	Rs. A. P.	
		SHAHPUR (PROVINCIAL) INUNDATION CANALS.			
		OCCUPIER'S RATE			
		<i>Ranjwah.</i>			
Settlement Report, 1887— 1894, paragraph 108.	I	Rice	8 8 0	1 4 0	Acre.
	II	All other crops	2 8 0	1 4 0	Do.
	III	Grass lands	1 4 0	1 4 0	Do.
		<i>Corbyswah.</i>			
	I	All crops	1 8 0	0 12 0	Acre.
	II	Grass lands	0 2 0	0 1 0	Do.
		MUZAFFARGARH INUNDATION CANALS.			
		OCCUPIER'S RATE.			
		<i>Chenab Canals</i>			
Irrigation Branch Notifica- tions No. 052-R. I., dated 7th July 1908. and No. 100-R. I., dated 2nd February 1916.	I	Rice, gardens and pepper	2 12 0	1 0 0	Acre of matured crop.
	II	Cotton, sugarcane and indigo	1 8 0	0 12 0	Ditto.
	III	Other kharif crops	1 2 0	0 9 0	Ditto.
Irrigation Branch Notifica- tion No. 434-R. I. dated 4th May 1907.	IV	Rabi crops	0 12 0	0 6 0	Ditto.
	V	Grass lands	0 6 0	0 8 0	Ditto.
		NOTE.—The rates for grass lands to be assessed at the discretion of the Deputy Commissioner.			
		<i>Indus Canals.</i>			
Irrigation Branch Notifi- cation No. 052-R. I., dated 7th July 1908, and No. 100-R. I., dated 2nd February 1917.	I	Rice, gardens and pepper	2 0 0	1 0 0	Acre of matured crop.
	II	Cotton, sugarcane and indigo	1 0 0	0 8 0	Ditto.
	III	Other Kharif crops	0 12 0	0 6 0	Ditto.
Irrigation Branch Notifica- tion No. 434-R. I., dated 4th May 1907.	IV	Rabi crops	0 8 0	0 4 0	Ditto.
	V	Grass lands	0 4 0	0 2 0	Ditto.
		NOTE.—The rate for grass lands to be assessed at the discretion of the Deputy Commissioner.			
		GHAGGAR INUNDATION CANALS (BRITISH).			
		OCCUPIER'S RATE.			
Irrigation Branch Notifica- tion No. 348-R. I., dated 27th November 1903.	I	Sugarcane	8 8 0	4 4 0	Acre measured per crop.
	II	Rice and water-nuts	6 0 0	8 0 0	Ditto.
	III	All other crops	2 8 0	1 4 0	Ditto.
		PROVISO.—Provided that no occupier's rates shall be levied in respect of any land for the time being assessed to fluctuating land revenue.			
		DELHI AND GURGAON WORKS.			
		OCCUPIER'S RATE.			
Irrigation Branch Notifi- cation No. 653-I., dated 6th April 1893.	...	All crops	Rs. A. P. 0 6 4½		Acre
	...	Grass	0 8 3½		Do
		NOTE.—This schedule is the same as that pub- lished in Notification No. 5253 I., dated 8th December 1873, which is hereby superseded.			

**STATEMENT SHOWING OCCUPIER'S RATE IN FORCE ON THE CANALS IN THE
PUNJAB DURING THE YEAR 1919 20—CONCLUDED.**

Authority.	Class.	Nature of crops.	RATE PER ACRE.		Per.
			Flow.	Lift.	
		DELHI AND GURGAON WORKS— CONCLUDED,	Rs. A. P.	Rs. A. P.	
		OCCUPIER'S RATE—concluded.			
		SCHEDULE OF RATES FOR SUPPLY OF WATER FOR PURPOSES OTHER THAN IRRIGATION.			
		WESTERN JUMNA CANAL, UPPER BARI DOAB CANAL, SIKHIND CANAL, LOWER CHENAB CANAL, UPPER JHELUM CANAL, LOWER JHELUM CANAL, UPPER CHENAB CANAL, LOWER BARI DOAB CANAL, UPPER SUTLEJ CANALS, LOWER SOHAG AND PARA CANALS, SINDHAI AND SUBSIDIARY CANALS, LOWER SUTLEJ AND CHENAB CANALS, INDUS CANALS, MUZAFFAR- GARH CANALS, SHAHPUR CANALS.			
Irrigation Branch Notifi- cations Nos. 651-I., dated 5th April 1896, 276-R. I., dated 16th December 1902, 540-R. I., dated 22nd April 1913, 0105- R. I., dated 26th June 1913, and 0248-R. I., dated 14th September 1916.	...	Brick-making and <i>pied</i> wall building ...	Rs. A. P. 0 8 0		100 cubic feet.
	...	Laying concrete and brick or stone masonry ...	0 2 0		Ditto.
	...	Metalling roads ...	10 0 0		Mile.
	...	Water supplied in bulk ...	1 0 0		2,500 cubic feet.
	...	Watering roadside or avenue trees ...	2 8 0 5 0 0		Canal mile of 5,000 feet, for kharif crop. Canal mile of 5,000 feet, for rabi crop.
Irrigation Branch Notifi- cation No. 825-R. I., dated 29th October 1900.	...				
Irrigation Branch Notifi- cation No. 0237-R. I., dated 28th September 1911.	...	<i>Proviso.—Except within the limits of Civil Stations, Cantonments and Municipalities no charge shall be made for water used for the manufacture of bricks not subsequently burnt in a kiln or for <i>pied</i> wall building, if taken from a water-course or tank lawfully supplied from a canal.</i>			
Irrigation Branch Notifi- cation No. 0252-R. I., dated 24th September 1913.	...				

PUNJAB PROVINCE.

IRRIGATION BRANCH.

ADMINISTRATIVE ACCOUNTS

FOR THE YEAR

1919-20.

No. Irr. 15-4—

dated _____ 192 ..

Copy forwarded to,

F. DUKOFF GORDON,

Accountant-General, Punjab.

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Name of Project.	ESTIMATED COST OF CONSTRUCTION.			CAPITAL OUTLAY INCLUSIVE OF INDIRECT			
	Direct charges.	Indirect charges.	Total.	During 1919-20.			To end of
				Direct charges.	Indirect charges.	Total.	Direct charges.
1	2	3	4	5	6	7	8
PROTECTIVE WORKS.							
<i>Canals in Operation.</i>							
<i>Imperial.</i>							
Western Jumna Canal	1,67,63,254	8,12,087	1,75,75,341	81,376	2,005	83,381	1,69,82,080
Upper Bari Doab Canal	2,08,14,095	7,39,168	2,15,53,263	1,58,074	548	1,57,526	2,15,00,068
Sirhind Canal	2,43,16,408	12,14,765	2,55,31,173	73,255	2,536	75,791	2,45,49,680
Lower Chenab Canal	3,24,80,293	7,87,383	3,32,67,676	1,76,817	8,012	1,84,829	3,18,93,662
Upper Sutlej Inundation Canals including Lower Sahag and Para.	16,95,973	1,01,041	17,97,019	6,077	...	6,077	17,17,332
Sidhnai Canal	12,50,188	40,229	12,90,417	2,301	4	2,305	12,92,750
Lower Jhelum Canal	1,79,69,589	4,51,091	1,84,20,680	2,93,978	13,352	3,07,330	1,65,62,850
Indus Inundation Canals	28,42,250	50,354	29,22,634	—3,116	—1	—3,117	28,98,244
Upper Chenab Canal	3,39,54,101	9,93,812	3,49,47,913	—2,16,391	—4,063	—2,20,454	3,45,55,301
Lower Bari Doab Canal	2,18,67,363	4,81,585	2,23,48,948	1,04,494	6,198	1,10,692	2,22,75,306
Upper Jhelum Canal	4,29,06,768	9,11,513	4,38,18,281	—4,80,016	—939	—4,80,955	4,36,07,505
TOTAL CANALS IN OPERATION—IMPERIAL	21,68,60,287	66,13,058	22,34,73,345	—1,19,299	27,652	—91,647	21,78,35,887
<i>Contribution.</i>							
Western Jumna Canal	11,64,229	...	11,64,229	3,751	..	3,751	11,64,229
Sirhind Canal	1,43,27,298	..	1,43,27,298	11,663	..	11,663	1,43,34,099
TOTAL CANALS IN OPERATION, CONTRIBUTION.	1,54,91,527	..	1,54,91,527	15,414	..	15,414	1,54,98,328

LAHORE :

The 1st September 1920. }

FOR THE YEAR 1919-20

Minor Works, the Capital outlay thereon, the Revenue derived therefrom, the working expenses of 1919-20.

DURING 1919-20.						WORKING EXPENSES AND MAINTENANCE DURING 1919-20 INCLUSIVE OF INDIRECT CHARGES, Nos. 3 AND 5.			NET RESULTS, EXCLUDING INTEREST, DIFFERENCE BETWEEN REVENUE AND WORKING EXPENSES				Simple Interest during 1919-20.		NET RESULTS INCLUDING INTEREST.			
Collected with Land Revenue.			Total.			Direct charges.	Indirect charges.	Total.	Excess revenue (sur- plus.)	Excess expenditure (deficit).	Rate per cent		Simple Interest during 1919-20.	Excess revenue (sur- plus.)	Excess expenditure (deficit).	Rate per cent.		
Actual transac- tions of the year.	Adjustment on account of previous year.	Total.	Actual transac- tions of the year.	Adjustment on account of previous year.	Total.						Of excess reve- nue.	Of excess ex- penditure.				Of excess reve- nue.	Of excess ex- penditure.	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	R.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
18,038	...	18,938	80,072	..	86,072	71,372	5,812	77,184	8,888	..	3.95	..	..	..	..	..	..
..	6,624	..	6,624	32,159	2,882	35,341	..	28,917	...	7.01	..	..	..	..	..
18,938	..	18,938	82,596	..	92,500	1,03,231	8,094	1,12,525	8,888	28,917	...	3.30	..	..	..	..	..
..	19,923	..	..	..	..	..	..	..
..	5,933	..	5,933	..	5,933	..	2.06	..	..	..	..	..
2,26,240	..	2,26,240	1,61,202	..	4,64,292	1,16,055	22,471	4,38,526	25,767	...	..	...	..	..	..	..	..
1,95,681	..	8,95,081	1,66,667	..	3,06,067	1,65,506	11,812	1,77,318	1,89,340	..	..	..	..	..	..	..	..
3,93,831	...	3,03,534	1,86,874	...	6,86,874	3,22,541	17,200	3,30,741	3,47,133	..	...	...	..	..	..	..	..
8,15,755	..	8,15,755	1,17,833	...	5,17,833	9,04,102	51,182	6,35,584	5,62,240	..	...	..	..	..	..	..	..
9,985	..	9,935	15,610	..	45,610	47,416	3,882	51,327	..	5,711	..	..	...	..	..	..	..
9,935	...	9,935	45,610	...	45,610	47,455	3,882	51,327	..	5,711	..	..	..	..	..	..	..

T. DJKOFF GORDON,

Accountant-General, Punjab.

HEADS OF ACCOUNT.	DIRECT CHARGES.									Cost of construction as now estimated (Construction Estimate closed on 31st March 1895).	Expenditure against closed Estimates.
	IMPERIAL.			CONTRIBUTION.			TOTAL.				
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
I.—WORKS.											
1.—HEAD WORKS.—											
B.—Land	4,673	..	4,673	..	..	..	4,673	..	4,673		
C.—Works	4,19,440	..	4,19,440	5,328	..	5,328	4,24,768	..	4,24,768		
K.—Buildings	42,311	2,272	44,583	..	2,775	2,775	42,311	5,047	47,358		
O.—Miscellaneous ...	13,539	..	13,539	..	..	..	13,539	..	13,539		
P.—Maintenance ..	24,839	..	24,839	..	..	..	24,839	..	24,839		
TOTAL	5,04,02	2,272	5,07,074	5,828	2,775	6,103	5,10,130	5,047	5,15,177		
2.—MAIN CANAL & BRANCHES—											
A.—Preliminary Expenses	50,508	—004	49,904	4,580	..	4,580	55,388	—004	54,484		
B.—Land	2,53,170	..	2,53,170	22,259	..	22,259	2,75,429	..	2,75,429		
D.—Regulators	2,44,056	..	2,44,056	25,671	..	25,671	2,69,727	..	2,69,727		
E.—Falls and Weirs ...	3,61,498	..	3,61,498	42,008	..	42,008	4,03,506	..	4,03,506		
F.—River and Hill Torrent Works.	2,749	..	2,749	1,051	..	1,051	3,800	..	3,800		
F.—(1).—Other Cross Drainage Works.	2,23,617	..	2,23,617	41,137	..	41,137	2,64,754	..	2,64,754		
G.—Bridges	8,25,808	..	8,25,808	51,270	..	51,270	8,77,078	..	8,77,078		
H.—Escapes	3,40,413	..	3,40,413	43,419	..	43,419	3,83,862	..	3,83,862		
I.—Navigation Works ..	13,87,990	..	13,87,990	29,864	..	29,864	14,17,854	..	14,17,854		
J.—Mills	55,115	..	55,115	3,835	..	3,835	58,950	..	58,950		
K.—Buildings	6,72,038	45,859	7,18,797	45,175	..	45,175	7,18,113	45,859	7,63,972		
L.—Earthwork	19,01,367	..	19,01,367	1,96,664	..	1,96,664	20,98,031	..	20,98,031		
M.—Plantations	10,032	..	10,032	4,650	..	4,650	23,682	..	23,682		
O.—Miscellaneous	54,280	..	54,280	3,768	..	3,768	58,057	..	58,057		
P.—Maintenance	1,58,861	..	1,58,861	18,444	..	18,444	1,77,305	..	1,77,305		
TOTAL	65,51,747	44,955	65,96,702	5,73,795	..	5,73,795	70,85,542	44,955	71,30,497		
3.—DISTRIBUTARIES—											
A.—Preliminary Expenses...	65,053	..	65,053	12,973	..	12,973	78,026	..	78,026		
B.—Land	3,10,862	..	3,10,862	6,956	..	6,956	3,17,817	..	3,17,817		
C.—Works	11,87,719	..	11,87,719	1,30,928	..	1,30,928	13,18,647	..	13,18,647		
L.—Earthwork	14,05,257	..	14,05,257	1,65,612	..	1,65,612	15,70,869	..	15,70,869		
O.—Miscellaneous	3,88,880	..	3,88,880	29,350	..	29,350	4,18,230	..	4,18,230		
P.—Maintenance	54,924	..	54,924	12,585	..	12,585	67,509	..	67,509		
TOTAL	34,12,605	..	34,12,605	3,58,403	..	3,58,403	37,71,008	..	37,71,008		

ACCOUNTANT-GENERAL.

PUNJAB PROVINCE.

FOR THE YEAR 1919-20.

Project.

AND TO END OF 1919-20.

HEAD OF ACCOUNT.	DIRECT CHARGES.									Cost of construction as now estimated (Construction Estimates closed on 31st March 1899).	Expenditure against closed Estimates.
	IMPERIAL.			CONTRIBUTION.			TOTAL.				
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
4.—DRAINAGE AND PROTECTIVE WORKS.											
A.—Preliminary Expenses.	20,301		20,301	1	...	1	20,302		20,302		
B.—Land ..	59,225		59,225	..			59,225		59,225		
C.—Works ..	2,08,426		2,08,426	..			2,08,426		2,08,426		
L.—Earthwork ..	4,27,461		4,27,461	3,113	..	3,113	4,30,577		4,30,577		
O.—Miscellaneous ..	22,647		22,647	..			22,647		22,647		
TOTAL ..	7,38,063		7,38,063	3,114		3,114	7,41,177		7,41,177		
TOTAL I.—WORKS ..	1,12,07,307	47,227	1,12,54,534	1,00,640	2,775	9,03,416	1,21,07,947	50,002	1,21,57,949		
Add expenditure on general works at end of 1864-65.	19,24,123		19,24,123	..			19,24,123		19,24,123		
TOTAL ..	1,31,31,430	47,227	1,31,78,657	9,00,640	2,775	9,03,416	1,40,32,070	50,002	1,40,82,072	1,41,08,760	1,40,73,012
II.—ESTABLISHMENT											
5. DIRECTION (a) ..	6,08,613			43,546			6,52,159				
6. EXECUTIVE ..	24,01,206			1,57,832			25,59,037				
8. SPECIAL SURVEY	1,31,761	13,985	31,55,653	0,000	819	2,08,312	1,37,848	14,784	33,63,065		
8½. SPECIAL FIELD SURVEY.	86			..			86				
LEAVE AND PENSION ALLOWANCES.	..			29,040	115	29,155	29,040	115	29,155		
TOTAL ..	31,11,685	13,985	31,55,653	2,36,542	934	2,37,476	33,74,230	14,899	33,93,129		
Add expenditure on general works at end of 1864-65.	1,85,590		1,85,590				1,85,590		1,85,590		
TOTAL ..	33,27,275	13,985	33,41,263	2,36,542	934	2,37,476	35,60,420	14,899	35,75,319	35,80,302	35,76,719
III.—TOOLS AND PLANT											
1. Scientific Instrument ..	..									
2. Plant and Machinery ..	..									
3. Tools ..	..									
4. Navigation Plant ..	..									
5. Camp Equipage ..	2,18,001	2,010	2,20,011	23,766	42	23,810	2,41,772	2,052	2,43,824		
6. Livestock ..	..									
7. Office furniture ..	..									
8. Repair and Carriage ..	..									
12. Miscellaneous ..	..									
TOTAL ..	2,18,001	2,010	2,20,011	23,766	42	23,810	2,41,772	2,052	2,43,824	2,44,204	2,43,824
IV.—SUSPENSE ACCOUNT.											
14. STOCK ..	2,36,474	36,620	2,73,094				2,36,474	36,620	2,73,094		
15. STOCK PURCHASES ..	—4,582	—17,666	—22,247				—4,582	—17,666	—22,247		
15a. STOCK SALES ..	500		500				500		500		
16. MISCELLANEOUS ADVANCE.	3,081	—781	3,200				3,081	—781	3,200		
TOTAL ..	2,36,373	18,174	2,54,547				2,36,373	18,174	2,54,547		
GRAND TOTAL ..	1,60,13,085	81,376	1,60,94,461	1,60,956	3,751	11,04,707	1,80,74,035	85,127	1,81,59,162	1,79,39,436	1,78,95,586
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.	11,481		11,481	472		472	11,053		11,053	11,053	11,053
NET TOTAL ..	1,60,01,604	81,376	1,60,82,980	1,60,478	3,751	11,04,229	1,80,62,982	85,127	1,81,47,209	1,79,27,483	1,78,83,632
APPORTIONMENT											
49.—IRRIGATION WORKS.	1,60,01,001	81,376	1,60,82,377	1,60,478	3,751	11,04,229	1,80,62,082	85,127	1,81,47,209		

(a) Share of accounts excluded under Imperial from 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Western Jumna Canal Project.

No. 3.—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CONTRIBUTION.			TOTAL.		
	Previous.	1919-20	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Occupiers' rates ..	..	31,82,107	...	..	...	...	...	31,82,107	...
Sales of water ..	...	20,514	...	..	36	...	...	20,530	...
Receipts from Plantations.	...	16,857	...	...	210	...	...	17,097	...
Receipts from other Canal Produce.	...	1,564	...	...	61	...	...	1,625	...
Water power ..	...	5,084	...	...	...	...	...	5,084	...
Navigation receipts	...	1,24,004	...	...	...	...	...	1,24,004	...
Rent of Buildings ..	...	8,184	...	...	206	...	...	8,450	...
Fines ..	...	1,480	...	...	66	...	...	1,546	...
Miscellaneous and other Receipts.	...	22,291	...	...	28	...	...	22,316	...
Total ..	10,56,97,84	31,82,985	10,90,80,830	37,056	724	37,780	10,57,34,901	33,83,700	10,91,18,610
Share of Land Revenue collected in the Civil Department.	1,94,55,942	1,83,304	1,96,39,246	...	...	...	1,94,55,942	1,83,304	1,96,39,246
Interest on sale-proceeds of waste lands benefited.	2,250	295	2,575	..	...	...	2,250	295	2,575
Total ..	1,94,58,222	1,83,599	1,93,41,821	...	...	...	1,94,58,222	1,83,599	1,96,41,821
TOTAL RECEIPTS ...	12,51,56,067	35,66,584	12,87,22,651	37,056	724	37,780	12,51,93,123	35,67,308	12,87,60,431

(a) Rs. 6,19,270 more would have been earned had not Owner's rates on certain lands irrigated remitted in favour of Revenue assignees.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Western Jumna Canal Project.

No. 2—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

CHARGES.	IMPERIAL			CONTRIBUTION.			TOTAL		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1)—EXTENSIONS AND IMPROVEMENTS									
(1)—HEAD WORKS	2,16,172	26,372	2,42,544	15,741	1,982	17,712	2,31,913	28,354	2,60,267
(2)—MAIN CANAL AND BRANCHES.	14,33,998	43,886	14,77,884	2,89,529	3,293	2,92,822	17,23,528	47,179	17,70,707
(3)—DISTRIBUTARIES.	8,75,259	34,780	9,10,039	50,513	..	50,513	9,21,771	34,780	9,66,551
(4)—DRAINAGE AND PROTECTIVE WORKS.	80,654	1,345	81,999	2,729	18	2,747	83,383	1,363	84,746
TOTAL I. A. ..	26,06,083	1,06,383	27,12,466	3,64,512	5,293	2,69,805	20,70,505	1,11,676	30,82,271
(2)—MAINTENANCE AND REPAIRS.									
(1)—HEAD WORKS	10,72,460	40,145	20,12,605	93,085	2,097	95,032	20,65,405	43,142	21,08,537
(2)—MAIN CANAL AND BRANCHES.	83,57,382	3,66,789	87,24,171	5,02,243	37,666	5,39,914	38,59,031	4,04,454	42,63,485
(3)—DISTRIBUTARIES.	46,92,816	1,80,380	48,73,196	1,71,219	..	1,71,219	48,64,065	1,80,380	50,44,415
(4)—DRAINAGE WORKS.	6,71,231	32,584	7,03,815	22,924	954	23,878	6,94,165	33,538	7,27,693
TOTAL I. B. ..	1,56,93,859	6,10,898	1,63,13,757	7,29,427	41,616	8,31,043	1,64,83,316	6,61,514	1,71,44,830
(3). COMPENSATION.	1,13,945	2,778	1,16,723	2,784	..	2,784	1,16,429	2,778	1,19,207
(4)—ESTABLISHMENT.									
(5)—DIRECTION AND ACCOUNT.	(c)								
(6)—EXECUTIVE ESTABLISHMENT.	1,13,40,027	25,308	1,13,71,335	4,82,548	10,258	4,98,806	1,18,28,575	4,46,467	1,23,75,042
(7)—MEDICAL DO.									
(7A)—REVENUE DO.	68,21,254	(b) 6,00,761	75,12,015	1,38,748	..	1,38,748	49,00,002	2,85,860	72,45,862
(7B)—NAVIGATION ESTABLISHMENT.	..	..	..	..	..	..	..	..	..
(7C)—PLANTATION ESTABLISHMENT	..	..	..	..	..	..	..	..	..
(7E)—MILL AND MACHINERY.	..	..	..	..	..	..	..	..	..
LEAVE & PENSION ALLOWANCE.	..	..	..	86,952	2,276	89,228	86,952	2,276	89,228
TOTAL ..	1,81,67,281	7,10,009	1,88,83,350	7,06,248	18,534	7,26,782	1,88,75,520	7,34,603	1,96,10,132

(a). Includes Rs. 12,985 on account of Saigniorage during the year. Up to date Rs. 2,13,000.

(b). Share of Accounts establishment excluded under Imperial from 1912-13 to 1917-18.

(c). Represents extra share on account of doubling up the outlay under 42—Revenue for 1918-19=Rs. 1,06,002, for 1919-20=Rs. 2,07,003.

OFFICE OF ACCOUNTANT GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Western Jumna Canal Project.

No. 3.—REVENUE ACCOUNTS FOR AND TO END OF 1910-20.

CHARGES.	IMPERIAL.			CONTRIBUTION.			TOTAL.		
	Previous.	1910-20.	Total.	Previous.	1910-20.	Total.	Previous.	1910-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(5)—TOOLS AND PLANT.									
(1)—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.									
(2)—PLANTS AND MACHINERY.									
(3)—TOOLS ..									
(4)—NAVIGATION PLANTS	5,62,237	31,033	5,93,270				5,86,876	33,142	6,20,018
(5)—CAMP EQUIP- AGE.									
(6)—LIVE STOCK..									
(7)—OFFICE FUR- NITURE.									
(12)—MISCELLANEOUS.				24,639	2,109	26,748			
(8)—REPAIRS AND CARRIAGE.									
TOTAL ..	5,62,237	31,033	5,93,270	24,639	2,109	26,748	5,86,876	33,142	6,20,018
(6)—REFUNDS OF REVENUE.	3,73,098	460	3,73,558	..	..	...	3,73,098	460	3,73,558
(7)—PROFIT AND LOSS.	1,295	..	1,295	..	..	..	1,295	..	1,295
General work to end of 1864-65.	48,92,523	..	48,92,523	..	..	...	48,92,523	..	48,92,523
TOTAL ..	4,24,10,051	14,76,021	4,38,86,072	18,89,610	67,552	10,57,162	4,42,90,661	15,44,173	4,58,43,834
Indirect charges debitable to Revenue Account as per Account No. 5.	29,46,476	1,00,475	30,46,951	..	..	..	29,46,476	1,00,475	30,46,951
TOTAL CHARGES	4,53,56,527	15,77,096	4,69,33,623	18,89,610	67,552	10,57,162	4,72,46,137	16,44,648	4,88,90,785
Balance, Net Revenue.	7,97,90,540	10,89,488	8,17,89,028	—18,52,554	—66,875	—19,19,382	7,79,46,986	19,22,660	7,98,69,646
GRAND TOTAL	12,51,56,067	35,66,584	12,87,22,651	37,056	724	37,780	12,51,93,123	35,67,308	12,87,60,431

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Western Jumna Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
Rs.	Rs.		Rs.
To Interest charges to end of 1918-19 ..	2,40,33,517	Not Revenue realized to end of 1918-19 ..	7,97,90,510
Do. for the year 1919-20 ..	5,78,809	Do. during 1919-20 ..	19,80,488
Total outlay to end of 31st March 1917			
1,68,83,536 @ 3.4.076 = 5,76,323			
Outlay from 1-4-17—31-3-19 and half of ..			
Outlay during 1919-20 = 53,750 @ 5.9.328 = 3,486			
5,78,809			
Total ..	2,52,12,326		
Balance Revenue after defraying Interest charges	5,63,76,702		
Total ..	8,17,89,028	Total ..	8,17,89,028

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of land Revenue	2,16,561	50	2,16,611
Leave and Pension Allowances { Imperial	5,93,621	1,955	5,95,576
{ Contribution	29,019	115	29,134
Total ..	8,39,181	2,120	8,41,301
Leave and Pension Allowances debited to Native States treated as Direct charges and transferred to Account No. 2 of the Canal.	29,019	115	29,134
Not debitable to Imperial	8,10,082	2,005	8,12,087
REVENUE—			
Capitalization of abatement of Land Revenue	17,517	225	17,742
Leave and Pension Allowances { Imperial	29,28,950	1,00,260	30,29,210
{ Contribution	80,952	2,276	83,228
Total ..	30,33,428	1,02,751	31,36,179
Deduct—			
Leave and Pension Allowances debited to Native States treated as Direct charges and transferred to Account No. 3 of this Canal.	80,952	2,276	83,228
Not debitable to Imperial Revenue	29,46,476	1,00,475	30,46,951

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Western Jumna Canal Project.

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against Open Canal Sanctions.	Total.	Charges to date.	Amount of sanctioned Estimates.	Unspent Balance of Estimate.		
IMPERIAL.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
DIRECT CHARGES.								
Works..	1,02,90,277	28,79,350	1,31,69,627	9,030	35,708	26,678	1,31,78,657	Rs. 2330 dated 28th June 1919. 2,471
Establishment ..	27,27,223	6,14,020	33,41,243	...	7,673	7,073	33,41,243	Do. 2607 12th Nov. 1919 3,254
Tools and Plant ..	1,77,785	42,229	2,20,014	...	470	470	2,20,014	Do. 2919 dated 28th Nov. 1919. No. 3,648
Suspense Balance ..	..	..	..	2,54,547	...	-2,54,547	2,54,547	2920 vember 1919.
Total ...	1,31,95,285	35,35,599	1,67,30,884	2,63,577	43,851	-2,19,726	1,69,94,461	Do. 546 dated 4th Feb. 12,502
Less Receipts on Capital Account in	11,201	280	11,481	...	...	..	11,481	547 ruary 1920.
Net Total ..	1,31,84,084	35,35,319	1,67,19,403	2,63,577	43,851	-2,19,726	1,69,82,980	Do. 548 dated 4th Feb. 4,067
INDIRECT CHARGES.								549 ruary 1920.
Capitalized abatement of Land Revenue.	1,53,157	63,444	2,16,611	...	..	..	2,16,611	Do. 739 dated 19th Feb. 7,621
Leave and Pension Allowances.	5,12,094	83,382	5,95,476	...	..	..	5,95,476	740 ruary 1920.
Total ..	6,65,251	1,46,826	8,12,087	...	..	..	8,12,087	Do. 763 dated 21st Feb. 6,543
GRAND TOTAL ..	1,38,49,345	36,82,145	1,75,31,490	2,63,577	43,851	-2,19,726	1,77,95,067	764 ruary 1920.
CONTRIBUTION								Do. 761 dated 21st Feb. 3,690
DIRECT CHARGES.								ruary 1920.
Works	8,34,341	89,074	9,03,415	...	..	..	9,03,415	
Establishment ..	2,17,498	19,978	2,37,476	...	..	..	2,37,476	
Tools and Plant ..	22,814	996	23,810	...	..	..	23,810	
Total ...	10,74,653	90,048	11,64,701	...	..	..	11,64,701	
Less Receipts on Capital Accounts	472	...	472	...	..	..	472	
Net Total ...	10,74,181	90,048	11,64,229	...	..	..	11,64,229	

Total .. 42,790

Do. 0980 W.I. dated 23rd September 1919. 1,055

43,851

OFFICE OF ACCOUNTANT-GENERAL,
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Bari Doab Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919 20.

HEADS OF ACCOUNT.	DIRECT CHARGES			Cost of construction as now estimated (Construction Estimate closed on 31st March 1900.)	Expenditure against closed Estimate.
	Imperial.				
	Previous	1919-20.	Total.		
I.—WORKS.	Rs.	Rs.	Rs.		
1.—HEAD WORKS—					
B.—Land	—261	..	—261		
C.—Works	8,23,558	..	8,23,558		
K.—Buildings	65,958	..	65,958		
TOTAL ..	8,89,255	..	8,89,255		
2.—MAIN CANAL AND BRANCHES—					
A.—Preliminary Expenses	8,186	..	8,186		
B.—Land	1,39,706	..	1,39,706		
D.—Regulator	3,52,039	..	3,52,039		
E.—Falls and Weirs	10,49,484	..	10,49,484		
F.—River and Hill Torrent Works	5,39,998	..	5,39,998		
F. (1)—Other Cross Drainage Works	1,18,245	..	1,18,245		
G.—Bridges	8,52,439	..	8,52,439		
H.—Escapes	6,38,733	..	6,38,733		
J.—Navigation Works	4,78,588	..	4,78,588		
J.—Mills	1,47,530	13,415	1,60,945		
K.—Buildings	10,94,347	..	10,94,347		
L.—Earthwork	39,00,749	..	39,00,749		
M.—Plantations	95,475	..	95,475		
O.—Miscellaneous	7,24,457	..	7,24,457		
P.—Maintenance	75,872	..	75,872		
TOTAL ..	1,11,15,848	13,415	1,11,29,263		
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	24,333	..	24,333		
B.—Land	3,68,015	—960	3,67,055		
C.—Works	10,20,805	..	10,20,805		
L.—Earth	10,98,384	..	10,98,384		
O.—Miscellaneous	3,15,807	..	3,15,807		
P.—Maintenance	8,354	..	8,354		
Add—Dinansgar Navigation Channel	35,770	..	35,770		
Shalpur Water Courses	63,427	..	63,427		
Lahore City Rajbaha	12,724	..	12,724		
TOTAL ..	41,56,025	—960	41,55,065		
Total carried over ..	1,01,61,728	12,455	1,01,74,183		

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Bari Doab Canal Project.

No. 2—CAPITAL ACCOUNT FOR AND TO THE END OF 1919-20—*concl.*

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction estimate closed on 31st March 1900).	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
I—WORKS—CONTINUED.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought over	1,01,61,729	12,455	1,61,74,183	..	..
4. DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary expenses	530	..	530		
B.—Land	6,610	..	6,610		
C.—Works	25,000	..	25,000		
L.—Earthwork	96,217	..	96,217		
O.—Miscellaneous	1,163	..	1,163		
TOTAL	1,23,574	..	1,23,574		
TOTAL I—WORKS	1,02,85,162	12,455	1,03,07,617	1,01,10,662	1,04,00,076
II—ESTABLISHMENT.					
5. Direction	34,71,171	3,914	34,75,085		
6. Executive					
7. Medical					
TOTAL	34,74,174	3,914	34,78,088	34,50,755	34,78,088
III—TOOLS AND PLANT.					
2. Plant and Machinery	9,26,511	153	9,26,664		
4. Navigation Plant					
5. Repairs and Carriage					
Miscellaneous					
TOTAL	9,26,511	153	9,26,664	9,30,090	9,26,664
IV—SUSPENSE ACCOUNT.					
11. Stock	8,22,176	—25,010	7,97,166		
15. Stock Purchases	—6,038	—5,765	—11,803		
15a. Stock Sales	62				
16. Miscellaneous Advances	1,63,141	—1,39,302	23,839		
18. London Stores	—41	—4,829	—4,870		
TOTAL	9,79,310	—1,74,896	8,04,414		
GRAND TOTAL	2,16,76,997	—1,57,074	2,15,17,023	2,08,31,500	2,08,05,128
V. LESS RECEIPTS ON CAPITAL ACCOUNTS	16,955	..	16,955	16,955	16,955
NET TOTAL	2,16,58,142	—1,58,074	2,15,00,068	2,08,14,095	2,07,88,173
APPORTIONMENT.					
19.—Irrigation Works	2,16,58,142	—1,58,074	2,15,00,068		

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Bari Doab Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	TOTAL.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupier's rates ..	10,70,01,930	42,77,027	11,21,78,957	(1)—EXTENSIONS AND IMPROVEMENTS.			
Owners' rates on irrigated land.	8,576	..	8,576	1.—HEAD WORKS ..	4,00,251	4,803	4,14,051
Sales of water ..	8,38,500	42,905	8,81,405	2.—MAIN CANAL AND BRANCHES ..	15,16,975	20,108	15,37,083
Supply of towns ..	3,603	390	4,083	3.—DISTRIBUTARIES ..	13,62,020	16,041	13,68,076
Receipts from Plantations.	11,57,252	95,094	12,53,246	4.—DRAINAGE AND PROTECTIVE WORKS.	2,22,250	6,978	2,50,237
Receipts from other Canal produce.	2,52,130	2,055	2,55,091	TOTAL (1) ..	35,00,511	47,936	35,48,440
Water-power ..	46,48,855	1,48,606	47,07,463	(2)—MAINTENANCE AND REPAIRS.			
Navigation Receipts ..	5,477	..	5,477	1.—HEAD WORKS ..	48,67,128	99,327	49,66,955
Rent of Buildings ..	..	..	..	2.—MAIN CANAL AND BRANCHES ..	96,12,041	3,90,555	1,00,11,506
Fines ..	22,22,236	1,70,081	24,01,919	3.—DISTRIBUTARIES ..	48,62,800	1,42,697	50,06,596
Miscellaneous and other Receipts.	..	..	..	4.—DRAINAGE WORKS ..	1,45,343	7,034	1,52,377
Total ..	11,70,38,050	47,47,500	12,17,85,210	TOTAL (2) ..	1,94,87,411	6,51,113	2,01,38,524
Share of Land Revenue collected in the Civil Department.	1,67,66,683	4,40,911	1,72,06,600	(3)—COMPENSATIONS.	40,616	..	40,616
Interest on sale proceeds of waste lands benefited	9,61,100	75,702	10,30,802	(4)—ESTABLISHMENT.			
Total ..	1,77,28,760	5,25,710	1,82,40,190	5.—DIRECTION AND ACCOUNT ..	1,18,83,930	23,164	1,19,07,094
TOTAL RECEIPTS ..	13,47,50,411	62,73,270	14,00,32,716	6.—EXECUTIVE ESTABLISHMENT do ..	75,56,236	6,80,045	82,36,281
				7.—MEDICAL ..	55,302	..	55,302
				7A.—REVENUE do ..	62	..	62
				7C.—PLANTATION do ..	..	..	..
				7D.—LEAVE AND PENSION ALLOWANCES.	..	..	..
				TOTAL (4)—ESTABLISHMENT.	1,94,95,520	7,03,209	2,01,98,729
				(5)—TOOLS AND PLANT.			
				1.—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.	..	..	..
				2.—PLANT AND MACHINERY ..	..	..	..
				3.—TOOLS ..	..	..	..
				4.—NAVIGATION PLANT ..	7,13,203	..	..
				5.—CAMP EQUIPAGE ..	..	..	..
				6.—LIVE STOCK ..	..	..	..
				7.—OFFICE FURNITURE ..	..	..	..
				8.—REPAIRS AND CARRIAGE ..	..	..	..
				9.—MISCELLANEOUS ..	..	..	..
				TOTAL (5)—TOOLS AND PLANT.	7,13,203	25,110	7,38,712
				6.—REFUNDS OF REVENUE.	1,79,192	10,514	2,26,708
				(7)—PROFIT AND LOSS.	1,073	..	1,073
				TOTAL ..	4,34,26,016	14,73,195	4,49,00,111
				Indirect charges debitable to Revenue Account as per Account No. 5	30,38,750	98,491	31,37,249
				TOTAL CHARGES	4,61,65,066	15,71,691	4,80,87,300
				Balance, Net Revenue	8,82,93,779	37,01,578	9,19,95,355
				GRAND TOTAL ..	13,47,50,411	52,73,270	14,00,32,716

(a). Share of Accounts excluded from 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.
Upper Bari Doab Canal Project
No. 4—INTEREST ACCOUNT FOR AND TO END OF 1919-20,

	Amount.		Amount
	Rs.		Rs.
Total Interest charges to end of 1918-19 ..	3,67,48,989	Net Revenue realised to end of 1918-19 ..	8,82,93,779
Do. for the year 1919-20 ..	..	Do, during 1919-20 ..	37,01,578
Total outlay to end of March 1917 .. Rs. 2,11,00,338	..		
Interest on Rs. 2 11,00,338 at 3.4076%... ..	7,19 016		
Total outlay during 1917-18 ..	—6,310		
Mean Capital at charge 1918-19	+ 5,64,114		
Add— $\frac{1}{2}$ outlay during 1919-20 ..	—79,037		
	4,78,787		
Interest at 5.9328 per cent. on 4,78,787	28,404		
Total ..	3,74,98,378		
Balance Revenue after defraying Interest charges ..	5,44,98,977		
Total ..	9,19,95,355	Total ..	9,19,95,355

No. 5 —ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue	20,661	..	20,661
Leave and Pension Allowances	7,17,959	548	7,18,507
Total ..	7,38,620	548	7,39,168
REVENUE—			
Capitalization of abatement of Land Revenue	20,449	50	20,499
Leave and Pension Allowances	30,18,301	98,449	31,16,750
Total ..	30,38,750	98,499	31,37,429

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.		
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		Authority.	No. and date.	Amount.
DIRECT CHARGES—	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Secretary, Irrigation Branch.	W. I. 015-06	Rs.
Works ..	1,24,50,791	39,49,285	1,64,00,076	—92,519	19,476	1,11,995	1,63,07,557		9 5-19 W. I. 0230.	3,137
Establishment ...	27,91,452	6,86,636	34,78,088	..	2,450	2,450	34,78,088		4-7-19 W. I. 1024	3,885
Tools and Plant ...	4,98,215	4,28,749	9,26,964	..	3,996	3,996	9,26,964		29-9-19 W. I. 01023	8,516
Suspense Balance ..	..	..	..	8,04,414	..	—8,01,414	8,01,414		13-1-20 W. I. 731	3,696
Total ..	1,57,40,458	50,64,670	2,08,05,128	7,11,895	25,922	—6,85,973	2,15,17,023		4-2-14	25,022
Less Receipts on Capital Account ..	16,955	..	16,955	..	..	..	16,955			
Net Total ..	1,57,23,503	50,64,670	2,07,88,173	7,11,895	25,922	—6,85,973	2,15,00,068			
INDIRECT CHARGES—										
Capitalized abatement of Land Revenue	8,381	12,280	20,661	..	..	..	20,661			
Leave and Pension Allowances ..	6,22,375	96,132	7,18,507	..	..	..	7,18,507			
Total ..	6,30,756	1,08,412	7,39,168	..	..	..	7,39,168			
GRAND TOTAL ..	1,63,54,259	51,73,082	2,15,27,341	7,11,895	25,922	—6,85,973	2,22,39,236			

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.									Cost of construction as now estimated (Construction Estimate closed on 31st March 1906).	Expenditure against closed Estimates.
	IMPERIAL.			CONTRIBUTION.			TOTAL.				
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.		
I.—WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. HEAD WORKS—											
A.—Preliminary Expenses ..	483	..	483	272	..	272	755	..	755	..	..
B.—Land ..	7,063	..	7,063	3,974	..	3,974	11,037	..	11,037	..	..
C.—Work ..	9,40,928	..	9,40,928	5,29,273	..	5,29,273	14,70,201	..	14,70,201	..	..
K.—Buildings ..	70,211	3,851	83,062	44,550	2,221	46,771	1,23,707	6,052	1,29,839	..	..
O.—Miscellaneous ..	73,804	..	73,804	3,538	..	3,538	77,342	..	77,342	..	..
P.—Maintenance ..	24,101	..	24,101	13,550	..	13,550	37,603	..	37,603	..	..
TOTAL ..	11,25,593	3,851	11,29,444	5,95,172	2,221	5,97,393	17,20,766	6,072	17,26,837	..	..
2. MAIN CANAL AND BRANCHES—											
A.—Preliminary Expenses ..	23,530	..	23,530	19,398	..	19,398	42,934	..	42,934	..	..
B.—Land ..	5,59,827	..	5,59,827	2,54,332	..	2,54,332	8,14,159	..	8,14,159	..	..
D.—Regulators ..	4,18,720	..	4,18,720	2,95,027	..	2,95,027	7,13,747	..	7,13,747	..	..
E.—Falls and Weirs ..	7,74,938	..	7,74,938	3,97,909	..	3,97,909	11,72,847	..	11,72,847	..	..
F.—(1) Other Cross Drainage Works.	12,32,587	..	12,32,587	10,41,544	..	10,41,544	22,74,130	..	22,74,130	..	..
G.—Bridges ..	8,19,522	2,270	8,21,792	4,89,672	..	4,89,672	13,09,194	2,270	13,11,470	..	..
H.—Escapes ..	1,86,686	..	1,86,686	1,03,313	..	1,03,313	2,89,999	..	2,89,999	..	..
I.—Navigation Works ..	17,24,076	—475	17,24,201	3,84,344	..	3,84,344	21,09,022	—475	21,08,547	..	..
J.—Mills ..	41,513	..	41,513	..	..	..	41,513	..	41,513	..	..
K.—Buildings ..	9,51,141	10,880	9,62,021	3,10,347	7,779	3,18,126	12,61,486	18,659	12,80,145	..	..
L.—Earthwork ..	48,70,093	..	48,70,093	31,61,044	..	31,61,044	80,37,707	..	80,37,707	..	..
M.—Plantations ..	1,50,812	..	1,50,812	1,04,350	..	1,04,350	9,25,170	..	9,25,170	..	..
N.—Tanks and Reservoirs ..	1,940	..	1,940	..	..	..	1,940	..	1,940	..	..
O.—Miscellaneous ..	87,897	..	87,897	77,387	..	77,387	1,05,284	..	1,05,284	..	..
P.—Maintenance ..	2,27,821	..	2,27,821	2,09,075	..	2,09,075	4,30,890	..	4,30,890	..	..
TOTAL ..	1,20,47,700	12,681	1,20,60,380	68,48,325	7,779	68,56,104	1,83,96,034	20,460	1,84,16,494	..	..
3. DISTRIBUTARIES—											
A.—Preliminary Expenses ..	51,003	..	51,003	39,471	..	39,471	91,379	..	91,379	..	..
B.—Land ..	3,86,683	2,437	3,89,120	72,601	..	72,601	4,59,284	2,437	4,61,721	..	..
O.—Works ..	14,11,177	10,359	14,21,536	7,95,007	..	7,95,007	22,06,184	10,359	22,16,543	..	..
L.—Earthwork ..	10,58,356	5,505	10,63,861	9,77,792	..	9,77,792	20,36,148	5,505	20,41,653	..	..
O.—Miscellaneous ..	2,55,488	88	2,55,576	17,803	..	17,803	2,73,289	88	2,73,370	..	..
P.—Maintenance ..	..	..	..	..	..	..	..	..	..	..	..
TOTAL ..	37,68,609	18,389	37,86,998	19,02,674	..	19,02,674	56,68,283	16,380	56,84,672	..	..
Carried over ..	1,60,36,911	34,021	1,60,71,932	93,46,171	10,000	93,56,171	2,62,83,082	44,021	2,63,28,003	..	..

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project.

No. 2—CAPITAL ACCOUNT FOR AND TO END OF 1919-20—CONTINUED.

HEADS OF ACCOUNT.	DIRECT CHARGES.									Cost of construction as now estimated (Construction Estimate closed on 31st March 1906).	Expenditure against closed Estimates.
	IMPERIAL.			CONTRIBUTION.			TOTAL.				
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rr.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought over ..	1 69,32,911	34,921	1,69,71,832	93,46 171	10,000	93,56,171	2,62,83,082	44,921	2,63,28,003	..	..
I.—WORKS—CONOLD.											
DRAINAGE AND PROTECTIVE WORKS—											
A.—Preliminary Expenses ...	31	..	31	17	..	17	48	..	48	..	..
B.—Land ..	55,982	..	55,982	44,536	..	44,536	1,00,518	..	1,00,518	..	..
C.—Works ..	3,303	..	3,393	1,858	..	1,858	5,161	..	5,161	..	..
L.—Earthwork ..	5,31,372	..	5,31,372	4,24,092	..	4,24,092	9,55,464	..	9,55,464	..	..
O.—Miscellaneous ..	..	..	..	..	..	..	..	..	..	..	..
P.—Maintenance ...	2,622	..	2,022	1,475	..	1,475	4,097	..	4,097	..	..
TOTAL ..	5,93,310	..	5,93,310	4,71,978	..	4,71,978	10,65,288	..	10,65,288	..	..
TOTAL I—WORKS ..	1,75,30,221	34,921	1,75,55,142	88,18,149	10,000	98,28,149	2,73,48,870	44,921	2,73,93,291	2,74,47,331	2,73,45,411
II.—ESTABLISHMENT.											
5. DIRECTION (a) ...	..	..	..	..	..	..	..	..	..	..	..
6. EXECUTIVE ..	..	..	..	..	..	..	..	..	..	..	..
7. MEDICAL ..	..	..	..	..	..	..	..	..	..	..	..
8. SPECIAL SURVEY ..	46,60,669	16,150	46,76,819	28,31,175	1,449	28,32,624	74,91,844	17,599	75,09,443	..	..
8½ SPECIAL FIXED SURVEY ..	..	..	..	..	..	..	..	..	..	..	..
LEAVE AND PENSION ALLOWANCES.	..	..	..	5,40,182	203	5,40,385	5,40,182	203	5,40,385	..	..
TOTAL ..	46,60,669	16,150	46,76,819	33,71,357	1,652	33,73,009	80,32,026	17,802	80,49,828	80,61,083	80,45,281
III.—TOOLS AND PLANT.											
9. NAVIGATION PLANT ..	..	..	..	..	..	..	..	..	..	..	..
10. MILL PLANT ..	..	..	..	..	..	..	..	..	..	..	..
11. RAILWAY PLANT AND ROLLING STOCK ..	21,05,654	178	21,05,832	11,90,970	11	11,90,981	32,96,624	189	32,96,813	..	..
12. MISCELLANEOUS ..	..	..	..	..	..	..	..	..	..	..	..
13. REPAIRS AND CARRIAGE ..	..	..	..	..	..	..	..	..	..	..	..
LOSS BY EXCHANGE ...	2,740	..	2,740	10,568	..	10,568	13,308	..	13,308	..	..
TOTAL ..	21,08,394	178	21,08,572	12 01,538	11	12,01,549	33,09,932	189	33,10,121	33,11,418	33,10,381
IV.—SUSPENSE ACCOUNT.											
STOCK ..	2,81,120	26,387	3,07,507	..	..	..	2,81,120	26,387	3,07,507	..	..
14. STOCK PURCHASES ..	..	..	..	..	..	..	..	..	..	..	..
15. STOCK SALES ...	—91	—1,031	—1,122	..	..	..	—91	—1,031	—1,122	..	..
16. MISCELLANEOUS ADVANCES ..	973	..	973	..	..	..	973	..	973	..	..
17. LONDON INVOICES ..	2,857	—3,350	—493	..	..	..	2,857	—3,350	—493	..	..
18. LONDON STORE ..	..	..	..	..	..	..	..	..	..	..	..
TOTAL ..	2,84,859	22,006	3,06,865	..	..	..	2,84,859	22,006	3,06,865	..	..
GRAND TOTAL ..	2,46,84,143	73,255	2,46 57,398	1,43 91,014	11,663	1,44,02,707	3,59,75,187	84,918	3,59,80,105	3,58,19,832	3,57,01,023
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.	1,07,518	..	1,07,518	68,60	..	68,60	1,76,126	..	1,76,126	1,76,126	1,76,126
NET TOTAL ..	2,44,76,625	73,255	2,45,49 880	1,43,22,436	11,663	1,43,34,099	3,57,99,061	84,918	3,58,83,979	3,56,43,700	3,55,24,897
APPORTIONMENT.											
49.—IRRIGATION WORK ..	2,44,76,625	73,255	2,45,49,880	1,43,22,436	11,663	1,43,34,099	3,57,99,061	84,918	3,58,83,979	..	..
43.—M. W. AND NAVIGATION ..	..	..	..	..	..	..	..	..	..	..	..
IMPERIAL ..	..	..	..	..	..	..	..	..	..	..	..
PROVINCIAL ..	..	..	..	..	..	..	..	..	..	..	..

(a). Share of Accounts Establishment excluded from 1913-14 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CONTRIBUTION.			TOTAL.		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Occupiers' rates..	7,83,07,802	30,40,803	8,22,57,005	18,040	2,000	20,718	7,83,25,848	30,52,560	8,22,78,407
Sales of water ..	4,57,803	23,544	4,80,437	18,805	...	18,805	4,76,758	28,544	5,05,302
Supply of towns ..	2,704	1,028	3,732	...	...	..	2,704	1,028	3,732
Receipts from Plantations ..	5,35,565	41,000	5,70,505	2,55,030	24,770	2,70,800	7,00,504	68,770	8,59,374
Receipts from other Canal produce.	1,88,028	1,140	1,89,174	1,03,203	..	1,03,203	2,01,321	1,140	2,02,467
Water power ..	21,95,271	1,41,177	23,36,448	9,57,420	43,803	10,31,310	31,82,697	1,88,070	33,67,767
Navigation Receipt	2,43,887	18,002	2,61,889	1,21,708	10,031	1,31,739	3,03,505	28,033	3,33,628
Rent of Buildings ..	1,30,415	5,700	1,36,175	53,173	1,590	55,063	1,83,588	7,050	1,91,238
Fines ..	40,377	2,438	51,815	510	...	516	40,803	2,438	52,331
Miscellaneous and other Receipts	18,82,010	45,807	19,27,916	50,917	1,907	52,823	19,32,906	47,774	19,80,740
Total ..	4,30,02,091	42,37,855	8,82,20,840	16,08,984	85,157	16,94,140	8,50,01,874	43,23,012	8,99,21,9-6
Share of Land Revenue collected in the Civil Department.	4,92,515	1,25,183	6,17,698	..	..	..	4,92,515	1,25,183	6,17,698
Interest on sale proceeds of waste land benefited.	..	..	..	..	..	..	..	..	..
TOTAL RECEIPTS ..	3,44,85,500	43,03,038	8,88,48,544	16,08,983	85,157	16,94,140	8,50,94,480	44,48,195	9,05,42,684

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

CHARGES.	IMPERIAL.			CONTRIBUTION.			TOTAL		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(1.)—EXTENSIONS AND IMPROVEMENTS.									
(1)—HEAD WORKS ..	2,23,031	4,385	2,27,416	1,23,557	2,466	1,26,023	3,48,568	6,851	3,55,439
(2)—MAIN CANAL AND BRANCHES	10,87,989	31,385	11,19,374	21,29,337	55,447	21,84,784	32,17,326	86,832	33,04,158
(3)—DISTRIBUTARIES ..	8,61,661	55,785	9,17,446	14,262	..	14,262	8,75,923	55,785	9,31,708
(4)—DRAINAGE AND PROTECTIVE WORKS.	44,365	..	44,365	22,250	..	22,250	66,615	..	66,615
TOTAL (1) ..	22,17,046	91,555	23,08,601	22,91,406	57,913	23,49,319	45,08,452	1,49,468	46,57,920
2—MAINTENANCE AND REPAIRS.									
1—HEAD WORKS ..	8,03,541	16,399	8,19,940	4,47,454	9,225	4,56,679	12,50,995	25,624	12,76,619
2—MAIN CANAL AND BRANCHES	49,12,622	2,19,727	51,32,349	28,84,109	1,13,426	30,07,535	78,06,731	3,33,153	81,39,884
3—DISTRIBUTARIES ..	48,96,842	1,54,254	50,51,096	366	..	366	48,97,208	1,84,254	50,81,462
4—DRAINAGE WORKS ..	5,40,023	6,359	5,46,382	2,37,290	4,199	3,41,489	8,77,318	10,558	8,87,876
TOTAL 2 ..	1,11,53,033	4,26,739	1,15,79,772	36,70,219	1,26,850	38,06,069	1,45,32,252	5,53,589	1,53,85,841
3—COMPENSATION ..	36,368	..	36,368	13,456	..	13,456	49,824	..	49,824
(4.)—ESTABLISHMENT.									
(1)—DIRECTION AND ACCOUNT ..									
(2)—EXECUTIVE ESTABLISHMENT									
(3)—MEDICAL Do. ..	1,29,39,842	7,38,239	1,36,68,081	28,88,356	1,01,111	30,03,623	1,58,18,198	8,52,506	1,66,71,704
(4)—REVENUE Do. ..									
(5)—NAVIGATION Do ..									
(6)—LEAVE AND PENSION ALLOWANCE. (14 PER CENT. ON Rs. 1,09,764.)	..	..	..	..	14,158				
TOTAL ..	1,29,39,842	7,38,239	1,36,68,081	28,88,356	1,15,269	30,03,623	1,58,18,198	8,52,506	1,66,71,704
TOTAL CARRIED OVER ..	2,03,36,289	12,56,533	2,15,92,822	88,72,437	3,00,030	91,72,467	3,52,08,726	15,56,568	3,67,65,289

(c). Includes seigniorage amounting to Rs 40,336 during the year.
Share of account Establishment under Imperial excluded from 1914-15 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project.

No. 31- REVENUE ACCOUNT FOR AND TO END OF 1919-20.

CHARGES.	IMPERIAL.			CONTRIBUTION.			TOTAL.		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
TOTAL BROUGHT OVER	2,03,36,280	12,56,533	2,75,92,822	88,72,437	3,00,030	91,72,467	3,52,08,720	15,56,568	3,67,65,289
(5)—TOOLS AND PLANT.									
(1)—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.									
(2)—PLANT AND MACHINERY ..									
(3)—TOOLS ..									
(4)—NAVIGATION ..									
(5)—CAMP EQUIPAGE ..	5,27,304	2,554	5,29,858	2,00,556	218	2,00,774	7,33,860	2,772	7,36,632
(6)—LIVE STOCK ..									
(7)—OFFICE FURNITURE ..									
(8)—REPAIRS AND CARRIAGE ..									
MISCELLANEOUS ..									
TOTAL ..	5,27,304	2,554	5,29,858	2,00,556	218	2,00,774	7,33,860	2,772	7,36,632
(6)—REFUNDS OF REVENUE	82,629	2,170	84,799	6,509	63	6,572	80,438	2,233	91,071
(7)—PROFIT AND LOSS ..	372	...	372	85	...	85	457	...	457
(6)—SUSPENSE ACCOUNT ..	...	...	...	...	...	...	...	...	...
MISCELLANEOUS ADVANCES ..	...	...	...	2,754	—2,195	559	2,754	—2,195	559
STOCK ..	...	...	...	18,440	830	19,270	18,440	830	19,270
STOCK SALES ..	...	...	...	...	...	...	...	...	...
STOCK PURCHASES ..	...	...	...	...	...	...	...	...	...
TOTAL SUSPENSE ACCOUNT ..	...	...	...	21,104	—1,355	19,829	21,104	—1,355	19,829
TOTAL ..	2,60,46,594	12,61,257	2,82,07,851	91,07,081	2,98,810	94,06,027	3,60,53,075	16,00,203	3,76,13,378
Indirect Charges debitable to Revenue Account as per Account No. 5.	18,20,347	1,03,953	19,24,300	...	...	...	18,20,347	1,03,953	19,24,300
TOTAL CHARGES ..	2,87,00,941	13,65,210	3,01,32,151	91,07,081	2,98,910	94,06,027	3,78,74,022	16,04,156	3,95,38,178
BALANCE NET REVENUE ..	5,57,18,565	20,07,828	5,87,10,393	—74,08,098	—2,13,780	—77,11,867	4,82,20,467	27,84,030	5,10,04,506
GRAND TOTAL ..	8,44,85,500	43,63,038	8,88,48,541	10,08,983	85,157	10,94,140	8,00,94,480	44,43,105	9,05,42,684

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sirhind Canal Project

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
	Rs.		Rs.
Total Interest charges to end of 1918-19	3,56,41,804	Net Revenue realised to end of 1918 19 ..	5,57,18,505
„ outlay to end of 31-3-17 Rs. 2,43,81,000 ..		Do. during 1919-20 ...	20,87,828
Total outlay from 1-4-17 to end of March 1919 Rs. 94,965			
Add half outlay during 1919 20 36,628			
	1,31,593		
Interest at 3 4076 per cent. or 2,43,81,000 ..	8,30,820		
Interest at 5 9325 per cent. on Rs. 1,31,593 ..	7,807		
Total ..	3,64,80,410		
Balance Revenue after defraying Interest charges ..	2,27,35,953		
Total ..	5,87,16,393	Total ..	5,87,16,393

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue	3,20,009	275	3,20,374
Leave and Pension Allowances .. { Imperial	8,02,130	2,261	8,04,391
.. { Contribution	5,40,182	203	5,40,385
Total ..	17,62,411	2,739	17,65,150
Deduct Leave and pension allowances debited to Native States treated as direct charges and transferred to Account No. 2 of the canal.	5,40,182	203	5,40,385
Net debit to Imperial Canal	12,12,229	2,530	12,14,765
REVENUE—			
Capitalization of abatement of Land Revenue	10,173	600	10,773
Leave and Pension Allowances ... { Imperial	18,10,174	1,03,353	19,13,527
.. { Contribution	3,55,433	14,156	3,69,589
Total ..	21,75,780	1,18,109	22,93,889
Deduct Leave and Pension allowances debited to Native States treated as direct charges and transferred to Account No. 3 of the canal.	3,55,433	14,156	3,69,589
Net Imperial Revenue	18,20,347	1,03,953	19,24,300

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20

Sirhind Canal Project.

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.		
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		Authority.	No. and date.	Amount.
IMPERIAL	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.			Rs.
DIRECT CHARGES—										
Works ..	1,56,33,673	18,94,632	1,75,28,305	36,937	95,081	58,144	1,75,05,142	Secretary I. B.	W. I. 09243 18-5-17	8,534
Establishment ..	42,71,854	4,04,966	46,76,820	...	14,268	14,268	46,76,820	Do.	W. I. 0761 25-7-17	5,450
Tools and Plant ..	20,82,854	25,710	21,08,573	...	984	984	21,08,573	Do.	W. I. 794 4-3-18	3,658
Suspense Balances ..	...	..	..	-3,06,864	...	3,06,864	-3,06,864	Do.	604 I. 8-11-17	60,044
Total ..	2,19,88,381	23,25,217	2,43,13,598	3,43,801	1,10,328	-2,33,473	2,46,57,399	G. I.	W. I. 9549 9-3-20	7,026
Less Receipts on Capital Account.	1,07,518	..	1,07,518	...	..	..	1,07,518	Secretary I. B.	W. I. 051 12-6-19	7,248
Net Total ..	2,18,80,863	23,25,217	2,42,06,080	3,43,801	1,10,328	-2,33,473	2,45,49,881	Do.	W. I. 0458 31-7-19	5,821
INDIRECT CHARGES—										
Capitalized abatement of Land Revenue.	3,15,278	5,096	3,20,374	..	..	...	3,20,374	Do.	W. I. 1927 2-6-19	1,194 c
Leave and Pension Allowance.	8,37,604	56,697	8,94,301	...	...	..	8,94,301	Do.	W. I. 1029 2-6-19	2,308 c
Total ..	11,52,973	61,792	12,14,765	...	...	...	12,14,765	Do.	W. I. 10331 2-6-19	2,592 c
GRAND TOTAL ..	2,30,33,836	23,87,009	2,54,20,845	3,43,801	1,10,328	-2,33,473	2,57,64,646	Do.	W. I. 1516 1-5-19	6,939
CONTRIBUTION.										
DIRECT CHARGES—										
Works ..	93,69,025	4,18,181	98,17,206	10,943	6,832	-4,104	98,28,145	Do.	W. I. 551 6-2-20	3,134
Establishment ..	32,06,604	1,01,357	33,68,461	5,120	1,529	-3,591	33,73,591	Do.	W. I. 1516 1-5-19	6,939
Tools and Plant ..	11,95,930	5,771	12,01,755	-209	103	312	12,01,549	Do.	Imperial Contributions.	1,10,823
Suspense Balances ..	...	...	..	...	..	...	...	Do.		8,481
Total ..	1,38,71,600	5,55,816	1,43,87,415	15,824	8,481	-7,383	1,43,03,289			
Less Receipts on Capital Account.	68,668	...	68,668	...	...	..	68,668			
Net Total ..	1,37,03,001	5,55,816	1,43,18,517	15,864	8,481	-7,383	1,43,34,681			
GRAND TOTAL ..	3,67,96,337	29,42,822	3,97,39,602	3,59,665	1,18,809	-2,40,856	4,00,99,327			

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Chenab Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1900).	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
I.—WORKS.	Rs.	Rs.	Rs.		
1.—HEAD WORKS—					
A.—Preliminary Expenses	5,710	..	5,710		
B.—Land	64,105	..	64,105		
C.—Works	£4,73,484	1,50,778	56,24,262		
K.—Buildings	97,901	..	97,901		
O.—Miscellaneous	6,084	..	6,084		
P.—Maintenance	1,68,784	..	1,68,784		
Total ..	58,16,008	1,50,778	59,66,846		
2.—MAIN CANAL AND BRANCHES—					
A.—Preliminary expenses	1,26,369	..	1,26,369		
B.—Land	1,90,078	—310	1,89,768		
D.—Regulators	11,10,890	..	11,10,890		
E.—Falls and Weirs	6,18,284	..	10,60,607		
F. (1).—Other Cross Drainage Works ..	6,87,002	..	6,87,002		
G.—Bridges	10,60,607	..	10,60,607		
H.—Escapes	5,42,313	..	5,42,313		
J.—Mills	73,020	..	73,020		
K.—Buildings	17,15,366	5,227	17,20,593		
L.—Earthwork	75,32,011	260	75,32,271		
M.—Plantations	1,39,734	..	1,39,734		
O.—Miscellaneous	3,96,857	..	3,96,857		
P.—Maintenance	1,05,047	..	1,05,047		
Q.—Loss of stock .. ..	..	326	326		
Total ..	1,42,97,578	5,503	1,43,03,081		
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	1,38,856	121	1,38,977		
B.—Land	1,29,784	..	1,29,784		
C.—Works	18,51,212	..	18,51,212		
L.—Earthwork	27,28,886	373	27,29,259		
O.—Miscellaneous	5,65,958	988	5,66,946		
P.—Maintenance	34,570	..	34,570		
Total ..	54,49,266	1,482	54,50,748		

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Chenab Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1900).	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
4.—DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary Expenses	19,771	..	19,771		
B.—Land	24,602	..	24,602		
C.—Works	47,446	..	47,446		
L.—Earthwork	1,78,736	..	1,78,736		
O.—Miscellaneous	37,550	..	37,550		
P.—Maintenance	1,162	..	1,162		
TOTAL	3,09,267	..	3,09,267		
TOTAL I.—WORKS	2,58,72,170	1,57,763	2,60,29,942	2,67,58,867	2,56,04,073
II. ESTABLISHMENT.					
5. DIRECTION					
6. EXECUTIVE	(a) 48,37,469	57,232	(a) 48,94,701		
7. MEDICAL					
8. SPECIAL SURVEY					
8½. SPECIAL FIELD SURVEY					
LEAVE AND PENSION ALLOWANCES					
TOTAL	48,37,469	57,232	48,94,701	50,28,500	48,94,701
III. TOOLS AND PLANT.					
9. NAVIGATION PLANT .. .. .	..			
10. MILL PLANT.. .. .	..			
11. RAILWAY PLANT AND ROLLING STOCK	15,000	—10,829	6,30,293		
12. MISCELLANEOUS	5,23,794				
13. REPAIRS AND CARRIAGE.. .. .	1,02,328				
LOSS BY EXCHANGE .. .. .	..			
TOTAL	6,41,122	—10,829	6,30,293	7,07,484	6,30,293
IV. SUSPENSE ACCOUNT.					
14. STOCK	3,74,811	—19,839	3,54,972		
15. „ PURCHASES	—16,076	1,686	—14,990		
15. (a) „ SALES.. .. .	6,507	—9,196	13,302		
16. MISCELLANEOUS ADVANCES	15,991				
17. LONDON INVOICES					
18. „ STORES					
TOTAL	3,80,633	—27,349	3,53,284		
GRAND TOTAL	3,17,31,403	1,76,817	3,19,08,220	3,24,94,851	3,11,89,067
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.	14,558	..	14,558	14,558	14,558
NET TOTAL	3,17,16,845	1,76,817	3,18,93,662	3,24,80,293	3,11,74,509
APPORTIONMENT.					
49.—IRRIGATION WORKS	3,17,02,435	1,76,817	3,18,79,252		
43.—M. W. AND NAVIGATION, IMPERIAL	14,410	..	14,410		

(a) Excludes Share of Accounts Establishment commencing from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Chenab Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

Receipts.	IMPERIAL.			Charges.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	(1) EXTENSIONS AND IMPROVEMENTS.	Rs.	Rs.	Rs.
Occupier's rates ..	14,88,05,370	90,34,705	15,79,00,075	1.—HEAD WORKS ..	17,91,601	40,388	18,31,989
Owner's rates on irrigated land.	58,13,828	..	58,13,828	2.—MAIN CANAL AND BRANCHES	13,78,334	31,021	14,10,255
Sales of water ..	3,37,048	28,037	3,66,885	3.—DISTRIBUTARIES ..	10,02,654	46,627	17,38,291
Supply of towns ..	26,471	4,498	31,369	4.—DRAINAGE AND PROTECTIVE WORKS.	2,64,624	16,373	2,70,997
Receipts from Plantations.	2,34,070	30,521	2,64,591	TOTAL (1) ..	51,17,213	1,34,819	52,51,532
Receipts from other Canal produce.	81,331	280	81,611	(2).—MAINTENANCE AND REPAIRS.			
Water power ...	3,12,861	16,620	3,29,481	1.—HEAD WORKS ...	21,43,926	42,518	21,86,444
Navigation ..	317	200	517	2.—MAIN CANAL AND BRANCHES	98,66,640	4,27,742	1,02,94,391
Rent of Buildings ...	2,46,121	12,500	2,58,621	3.—DISTRIBUTARIES ..	51,79,097	2,62,667	54,41,764
Fines ..	30,150	4,441	43,600	4.—DRAINAGE AND PROTECTIVE WORKS.	1,43,467	16,737	1,60,194
Miscellaneous and other Receipts.	4,74,753	22,474	4,97,227	TOTAL (2) ...	1,73,33,129	7,49,664	1,80,92,793
Total ...	15,61,36,332	91,56,579	16,55,90,811	(3).—COMPENSATION.	1,10,378	244	1,10,622
Share of Land Revenue collected in the Civil Department.	5,87,29,794	67,44,333	6,54,74,127	(4).—ESTABLISHMENT.			
Interest on sale proceeds of waste lands benefited.	87,85,590	9,57,557	97,23,147	5.—DIRECTION AND ACCOUNT ..	1,00,78,112	10,338	1,00,88,500
Total ...	6,74,95,384	77,01,890	75,19,72,714	6.—EXECUTIVE ESTABLISHMENT			
				7.—MEDICAL Do.	96,48,142	12,20,866	1,08,68,008
				7. A.—REVENUE Do.			
				TOTAL (3) ...	1,97,26,254	12,31,244	2,09,57,498
				5.—TOOLS AND PLANT.	8,61,129	—60,512	8,00,617
				TOTAL ...	8,61,129	—60,512	8,00,617
				6.—REFUNDS OF REVENUE	1,19,218	14,237	1,33,455
				TOTAL ..	4,32,67,321	20,09,196	4,58,36,517
				Indirect charges debitable to Revenue Account as per Account No. 5.	27,65,600	1,72,374	29,38,073
				TOTAL CHARGES ..	4,60,33,020	22,41,670	4,82,74,690
				Balance Net Revenue ..	17,78,97,696	1,46,15,899	19,25,13,495
				GRAND TOTAL ..	22,39,30,616	1,68,67,469	24,07,88,085
Total Receipts ...	22,39,30,616	1,68,67,469	24,07,88,085				

(a) Exclude share of Accounts Establishment commencing from 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Chenab Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
	Rs.		Rs.
Total outlay from 1st April 1917 to 31st March 1919 ...	2,59,10,862	Net Revenue realized to end of 1918-19 ..	17,78,07,596
Add one-half outlay for 1919-20 .. ..	..	Do. do. during 1919-20 ..	1,49,15,896
Total interest charges to end of 1918-19 .. ..	..	
Total outlay to end of 31st March 1917 .. Rs. 3,15,78,920			
Less half the outlay during 1919-20	1,27,925		
Interest at 3·4070 % Rs. 3,15,78,920 ..	88,409		
Interest at 5·9328 per cent. 2,26,334	13,428		
Total ..	2,79,00,363		
Balance Revenue after defraying interest charges ..	16,55,13,132		
Total ..	19,25,12,495	Total ..	19,25,13,495

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS.				Previous.	1918-19.	Total.
				Rs.	Rs.	Rs.
CAPITAL—						
Capitalization of abatement of Land Revenue ..	..	..	..	1,02,244	..	1,02,244
Leave and Pension Allowances ..	..	..	..	6,77,127	8,012	6,85,139
Total ..				7,79,371	8,012	7,87,383
REVENUE—						
Capitalization of abatement of Land Revenue ...	..	..	..	4,025	..	4,025
Leave and Pension Allowances ..	..	..	..	27,01,674	1,72,374	28,74,048
Total ..				27,05,699	1,72,374	28,78,073

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.		
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate				
DIRECT CHARGES—	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Government of India.	530 I.	Rs. 1,75,752
Works . . .	1,09,23,202	57,40,871	2,50,61,073	3,05,860	10,91,791	7,28,925	2,60,20,012	Do.	8-4-13	2,25,338
Establishment . .	36,40,060	12,51,636	48,04,701	..	1,33,790	1,33,790	48,94,701	Do.	6-4-14	1,48,607
Tools and Plant . .	5,28,825	37,468	0,30,293	..	77,191	77,191	6,30,293	Do.	1206 I.	25 8 14
Suspense Balances . .	..	..	..	3,53,284	..	3,53,284	3,53,284	Do.	0588	14-8 19
Total . .	2,41,58,003	70,32,074	3,11,89,007	7,19,153	13,05,784	5,80,631	3,19,08,220	Do.	0826	2-9-10
Less Receipts on Capital Account.	14,403	155	14,558	..	..	..	14,558	Do.	387 I.	17-12-19
Not Total . .	2,41,41,600	70,32,819	3,11,74,500	7,19,153	13,05,784	5,80,631	3,18,93,662	Local Government.	3283 W. I.	8 12-17
INDIRECT CHARGES.								Do.	3270	8 12-17
Capitalized abatement of Land Revenue.	92,060	10,185	1,02,244	..	..	..	1,02,244	Do.	2792 W. I.	22-11-19
Leave and Pension Allowances.	5,00,490	1,75,610	6,85,130	..	..	..	6,85,130	Do.	539 W. I.	3-2-20
Total . .	6,01,540	1,85,834	7,87,388	..	..	..	7,87,388	Do.	1249 W. I.	24-3-20
GRAND TOTAL	2,47,43,239	72,18,653	3,19,61,892	7,19,153	13,05,784	5,80,631	3,20,81,046			13,05,784

IRRIGATION BRANCH:

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Sutlej Inundation Canals Project

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1890).	Expenditure against closed Estimate.
	IMPERIAL.				
	Previous.	1919-20.	Total.		
I.—WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.
2.—MAIN CANAL AND BRANCHES—					
A.—Preliminary Expenses	3,849	..	3,849	..	..
B.—Land	43,848	..	43,848	..	..
D.—Regulators	30,512	..	30,512	..	..
E.—Falls and Weirs	69, 15	..	69,015	..	..
G.—Bridges	52,402	..	52,402	..	..
K.—Buildings	2,20,883	..	2,20,883	..	..
L.—Earthwork	5,52,555	..	5,52,555	..	..
O.—Miscellaneous	5,112	..	5,112	..	..
P.—Maintenance	2,457	..	2,457	..	..
TOTAL	9,80,723	..	9,80,723	..	..
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	3,842	..	3,842	..	..
B.—Land	45,782	..	45,782	..	..
C.—Works	82,930	..	82,930	..	..
L.—Earthwork	2,35,365	..	2,35,365	..	..
O.—Miscellaneous	22,911	..	22,911	..	..
P.—Maintenance	4,652	..	4,652	..	..
TOTAL	3,05,512	..	3,05,512	..	..
TOTAL I.—WORKS	13,76,235	..	13,76,235	13,76,235	13,76,235
II.—ESTABLISHMENT.					
5.—DIRECTION (a)	51,009	..	51,009	..	..
C.—EXECUTIVE	2,37,350	..	2,37,350	..	..
7.—MEDICAL	2,953	..	2,953	..	..
TOTAL	2,95,212	..	2,95,212	2,95,212	2,95,212
III.—TOOLS AND PLANT.					
12.—MISCELLANEOUS	21,573	..	21,573	..	..
13.—REPAIRS AND CARRIAGE	114	..	114	..	..
TOTAL	21,687	..	21,687	21,687	21,687
IV.—SUSPENSE ACCOUNT.					
14.—STOCK	14,069	6,288	20,957	..	..
14 (a).—STOCK PURCHASES	—11	—43	—40	..	..
15.—STOCK SALES	14	..	..	..	..
6.—MISCELLANEOUS ADVANCES	605	108	773	..	..
TOTAL	15,277	6,077	21,354	..	..
GRAND TOTAL	17,11,411	6,077	17,17,488	16,96,134	16,96,134
V.—Less RECEIPTS ON CAPITAL ACCOUNT.	156	..	156	156	156
NET TOTAL	17,11,255	6,077	17,17,332	16,95,978	16,95,978
APPORTIONMENT.					
9.—IRRIGATION WORKS	9,21,348	6,077	9,27,425	..	..
3.—M. W. AND NAVIGATION—PROVINCIAL	7,89,907	..	7,89,907	..	..

(a) Share of Accounts Establishment excluded from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Sutlej Inundation Canals Project.

No. 3.—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ..	98,16,610	5,22,207	1,03,41,826	(1) EXTENSIONS AND IMPROVEMENTS.			
				(2)—MAIN CANAL AND BRANCHES.	4,37,644	7,135	4,44,779
Owners' rates on irrigated land.	17,732	...	17,732	(3)—DISTRIBUTARIES ..	1,04,101	700	1,04,807
				(4)—DRAINAGE AND PROTECTIVE WORKS.	1,158	..	1,158
Sales of water ..	3,259	141	3,400				
				TOTAL (1) ..	6,32,003	7,841	6,40,744
Receipts from Plantations ..	1,35,380	4,067	1,39,447	(2)—MAINTENANCE AND REPAIRS.			
				(1)—HEAD WORKS ..	10,379	...	10,379
Receipts from other Canal Produce.	76,930	1,101	78,097	(2)—MAIN CANAL AND BRANCHES.	52,03,103	1,72,058	54,65,161
				(3)—DISTRIBUTARIES ..	9,77,180	25,898	10,03,078
Rent of Buildings ..	9,562	1,392	10,954				
				TOTAL (2) ..	62,80,662	1,07,956	64,78,618
Fines ..	2,25,971	810	2,26,781	(3)—COMPENSATION ..	8,695	...	8,695
				(5)—DIRECTION AND ACCOUNT.			
Miscellaneous and other Receipts.	46,108	8,116	54,224	(6)—EXECUTIVE ESTABLISHMENT.	32,42,181	6,080	32,48,261
Contribution ..	22,835	...	22,835	(7)—MEDICAL ESTABLISHMENT.			
				7(A)—REVENUE ESTABLISHMENT	14,08,617	2,01,237	16,09,854
Total ..	1,03,57,402	5,37,891	1,08,95,296	(4)—ESTABLISHMENT.	47,40,798	2,07,317	49,48,115
				(5)—TOOLS AND PLANT.	80,607	7,493	88,100
Share of Land Revenue collected in the Civil Department.	82,27,850	1,00,115	84,17,974	(6)—REFUNDS OF REVENUE.	25,983	635	26,518
				(7)—PROFIT AND LOSS ..	379	...	379
Interest on sale-proceeds of waste lands benefited.	1,00,025	10,086	1,22,711				
				TOTAL ..	1,17,70,027	4,21,142	1,21,91,169
				Indirect Charges debitable to Revenue Account as per Account No. 5.	7,26,073	29,274	7,55,347
Total ..	83,34,484	2,00,201	85,10,685	TOTAL CHARGES ..	1,24,96,100	4,50,416	1,29,46,516
				Balance, Not Revenue ..	61,95,786	2,03,679	64,99,465
TOTAL RECEIPTS ..	1,86,91,886	7,44,095	1,94,35,981	GRAND TOTAL ..	1,86,91,886	7,44,095	1,94,35,981

(a) Share of Accounts Establishment excluded from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Sutlej Inundation Canals Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
	Rs.		Rs.
Total interest charges to end of 1918-19	23,42,485	Net Revenue realized to end of 1918-19 ..	61,95,786
" " for the year 1919-20		" " during 1919-20	2,93,679
Total outlay to end of 1916-17	Rs. 17,18,805		
Interest on Rs. 17,18,805 @ 3.4076 %	58,570		
Total during 1917-18	2,523		
Do. 1918-19	5,027		
Do. 1919-20	+6,077		
Less $\frac{1}{2}$ outlay during 1919-20	3,039		
	4,512		
Interest on Rs. 4,512 @ 5.9328 %	268		
Total interest charges	58,302		
Balance Revenue after defraying interest charges	24,00,787		
	40,88,678		
Total	61,89,465	Total	61,89,465

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue	58,033		58,033
Leave and Pension Allowances	43,008		43,008
Total	1,01,041		1,01,041
REVENUE—			
Capitalization of abatement of Land Revenue	12,723	250	12,973
Leave and Pension Allowances	7,13,350	20,024	7,42,374
Total	7,26,073	20,274	7,55,347

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanction.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
DIRECT CHARGES—								
Works	10,07,761	3,68,474	13,76,235	...	...	...	13,76,235	
Establishment	2,24,750	70,453	2,95,212	...	...	...	2,95,212	
Tools and Plant	20,068	4,619	24,687	...	...	...	24,687	
Suspense .. ..	...	...	...	21,354	...	-21,354	21,354	
Total	12,52,588	4,43,546	16,96,134	21,354	...	-21,354	17,17,488	
Less Receipts on Capital Account	156	...	156	...	...	...	156	
Net Total	12,52,432	4,43,546	16,95,978	21,354	...	-21,354	17,17,332	
INDIRECT CHARGES—								
Capitalized abatement of Land Revenue	58,033	4,352	62,385	...	...	...	62,385	
Leave and Pension Allowances	33,148	9,860	43,008	...	...	...	43,008	
Total	91,181	14,212	1,05,393	...	...	...	1,05,393	
GRAND TOTAL	13,39,261	4,57,758	17,97,019	21,354	...	-21,354	18,16,373	

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sidhnai Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

Head of Account.	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1892.)	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1910-20.	Total.		
I.—WORKS.					
1. HEAD WORKS.—	Rs.	Rs.	Rs.	Rs.	Rs.
A.—Preliminary Expenses	754		754		
B.—Land	235		235		
C.—Works	2,46,260		2,46,260		
K.—Buildings	11,646		11,646		
O.—Miscellaneous.. .. .	301		301		
Total	2,59,296		2,59,296		
2.—MAIN CANAL AND BRANCHES—					
A.—Preliminary Expenses	4,014		4,014		
B.—Land	22,422		22,422		
D.—Regulators	49,568		49,568		
G.—Bridges	41,950		41,950		
K.—Buildings	80,789		80,789		
L.—Earthwork	2,59,606		2,59,606		
M.—Plantations	821		821		
O.—Miscellaneous	427		427		
P.—Maintenance	5,304		5,304		
Total	4,67,411		4,67,411		
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	3,965		3,965		
B.—Land	11,387		11,387		
C.—Works	66,622		66,622		
L.—Earthwork	1,36,784		1,36,784		
O.—Miscellaneous	105		105		
Total	2,18,823		2,18,823		

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sidhnai Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

Head of Account,	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1892).	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
4. DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary Expenses 	36	..	36	..	..
C.—Miscellaneous .. .. ..	..	99	99	..	..
TOTAL ..	36	99	135	..	..
Total I.—WORKS ..	9,45,656	99	9,45,755	9,47,630	9,45,656
II.—ESTABLISHMENT.					
5. DIRECTION 	40,502	26	2,64,269	..	..
6. EXECUTIVE 	2,14,741				
7. MEDICAL 					
TOTAL ..	2,64,243	26	2,64,269	2,64,713	2,64,269
III.—TOOLS AND PLANT,					
12. MISCELLANEOUS 	38,039	..	38,039	..	..
13. REPAIR AND CARRIAGE 					
TOTAL ..	38,039	..	38,039	38,069	38,039
IV.—SUSPENSE ACCOUNT.					
14. STOCK PURCHASES 	—654	—101	—755	..	..
15. STOCK SALES 	+124	..	+124	..	..
16. MISCELLANEOUS ADVANCES 	+206	—12	+194	..	..
17. STOCK 	+43,059	2,289	45,348	..	..
TOTAL ..	42,735	2,176	44,911	..	..
GRAND TOTAL ..	12,90,673	2,301	12,92,974	12,50,412	12,47,904
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.	224	..	224	224	224
NET TOTAL ..	12,90,449	2,301	12,92,750	12,50,188	12,47,740
APPORTIONMENT.					
42. IRRIGATION WORKS 	12,76,143	2,301	12,74,444	..	..
IMPERIAL					
43. M. W. AND NAVIGATION	18,306	..	18,306	..	..
PROVINCIAL					

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Siddhni Canal Project.

No. 3—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ...	1,06,31,073	5,54,388	1,11,85,461	1.—EXTENSIONS AND IMPROVEMENTS.			
Owners' rates ...	46	...	46	1. HEAD WORKS ..	33,848	161	34,009
Sales of water ...	45,395	39	45,434	2. MAIN CANAL AND BRANCHES	1,79,770	3,534	1,83,354
Receipts from Plantations ..	8,161	1,081	9,242	3. DISTRIBUTARIES ..	91,500	3,241	94,830
Receipts from other Canal produce.	9,762	1,230	11,001	4. DRAINAGE AND PROTECTIVE WORKS.	508	...	508
Rent of Buildings ..	19,437	240	19,677	TOTAL I ...	3,05,716	6,085	3,12,701
Fines ..	8,862	431	9,293	2.—MAINTENANCE AND REPAIRS.			
Miscellaneous and other Receipts.	17,897	2,642	20,539	1. HEAD WORKS ..	3,59,567	7,587	3,67,154
Total ...	1,07,40,633	5,60,060	1,13,00,693	2. MAIN CANAL AND BRANCHES	9,82,026	31,084	10,14,310
Share of land Revenue collected in the Civil Department.	20,43,698	63,907	21,07,505	3. DISTRIBUTARIES ..	5,54,712	19,270	5,73,982
Interest on sale-proceeds on waste lands benefited.	3,87,535	32,883	4,20,418	TOTAL I B. ..	18,96,905	58,541	19,55,446
Total ..	24,31,133	96,780	25,27,923	3.—COMPENSATION ..	231	...	231
TOTAL RECEIPTS ..	1,31,71,766	6,50,860	1,38,28,616	4.—ESTABLISHMENT			
				5. GENERAL ESTABLISHMENT INCLUDING DIRECTION AND ACCOUNT.	10,65,335	3,817	10,69,152
				6. REVENUE ESTABLISHMENT...	6,86,974	46,205	7,33,239
				TOTAL ..	17,52,309	50,082	18,02,391
				5.—TOOLS AND PLANT ...			
				1. SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
				2. PLANT AND MACHINERY ..			
				3. TOOLS ..			
				4. NAVIGATION PLANT ..	60,086	254	60,340
				5. CAMP EQUIPAGE ..			
				6. LIVE STOCK ..			
				7. OFFICE FURNITURE ..			
				8. REPAIRS AND CARRIAGE ..			
				12. MISCELLANEOUS ..			
				TOTAL ..	60,086	254	60,340
				6. REFUNDS OF REVENUE	2,330	58	2,388
				TOTAL ..	40,17,577	1,15,920	41,33,497
				Indirect Charges debitable to Revenue Account as per Account No. 5.	2,45,608	7,012	2,52,620
				TOTAL CHARGES ..	42,63,185	1,22,932	43,86,117
				Balance, Net Revenue ..	89,08,581	5,33,918	94,42,499
				GRAND TOTAL ..	1,31,71,766	6,50,860	1,38,28,616

(a). Includes Rs. 4,914 on account of fees for collection of Revenue.

IRRIGATION BRANCH.

OFFICE OF ACCOUNTANT-GENERAL.

PUNJAB PROVINCE.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Sidhnai Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
	Rs.		Rs.
Total Interest charges to end of 1918-19	14,17,842	Net Revenue realized to end of 1918-19	80,08,681
Total outlay up to 31st March 1917	12,95,265	Do. during 1919-20	5,33,918
Total outlay up to 31st March 1919	4,816		
Add half outlay during 1919-20	1,151		
Total	3,665		
Interest at 3.4076 % on Rs. 12,95,265	44,137		
Interest at 5.9328 on Rs. 3,665	217		
Total	14,61,762		
Balance Revenue after defraying interest charges	79,80,737		
Total	91,42,499	Total	91,42,499

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue	3,328		3,328
Leave and Pension Allowances	36,897	4	36,901
Total	40,225	4	40,229
REVENUE—			
Capitalization of abatement of Land Revenue	285		285
Leave and Pension Allowances	2,45,823	7,012	2,52,835
Total	2,45,808	7,012	2,52,820
GRAND TOTAL	2,85,833	7,016	2,82,839

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
DIRECT CHARGES—								
Works	7,01,274	2,44,452	9,45,656	99	1,974	1,875	9,45,755	Secretary's No. 1318 W. I., dated 16-4-19, Rs. 2,448.
Establishment	2,04,893	59,460	2,64,260		444	444	2,64,260	
Tools and Plant	22,253	15,786	38,039		30	30	38,039	
Suspense Balance				44,911		—44,911	41,911	
TOTAL	9,28,260	3,19,704	12,47,964	45,010	2,448	—42,562	12,92,974	
Less Receipts on Capital Account	224		224				224	
NET TOTAL	9,28,036	3,19,704	12,47,740	45,010	2,448	—42,562	12,92,750	
INDIRECT CHARGES—								
Capitalized abatement of Land Revenue	2,994	334	3,328				3,328	
Leave and Pension Allowance	28,576	8,325	36,901				36,901	
TOTAL	31,570	8,659	40,229				40,229	
GRAND TOTAL	9,59,605	3,28,363	12,87,969	45,010	2,448	—42,562	13,32,979	

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919 20.

HEAD OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated.	Expenditure against closed Estimate.
	Imperial.				
	Previous.	1919-20.	Total.		
I.—WORKS.					
1.—HEAD WORKS—	Rs.	Rs.	Rs.	Rs.	Rs.
A.—Preliminary Expenses	12,619	..	12,619		
B.—Land	31,772	..	31,772		
C.—Works	32,21,708	47,341	32,69,047		
K.—Buildings	1,47,687	18,323	1,66,010		
O.—Miscellaneous	19,278	..	19,273		
P.—Maintenance	28,020	..	28,020		
TOTAL	34,61,077	59,664	35,20,741	..	35,04,635
2.—MAIN CANAL AND BRANCHES—					
A.—Preliminary Expenses	93,738	22	93,760		
B.—Land	2,40,781	...	2,49,781		
D.—Regulators	4,40,300	96,265	5,36,565		
E.—Falls and Weirs	2,34,947	..	2,34,947		
F.—(1)—Other Cross Drainage Works	1,20,258	..	1,20,258		
G.—Bridges	6,91,284	..	6,91,284		
H.—Escapes	4,78,540	..	4,78,540		
J.—Mills	1,07,620	974	1,08,594		
K.—Buildings	10,64,701	6,018	10,60,719		
L.—Earthwork.. .. .	23,05,570	34,313	23,39,883		
M.—Plantations	86,179	..	86,179		
O.—Miscellaneous	46,457	..	46,457		
P.—Maintenance	32,373	..	32,373		
Total	59,41,748	1,37,592	60,79,340	..	60,69,647
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	61,101	..	61,101		
B.—Land	1,49,812	..	1,49,812		
C.—Works	15,52,826	31,008	15,83,834		
L.—Earthwork	13,74,003	32,848	14,06,851		
O.—Miscellaneous	5,58,149	—38,262	5,19,887		
P.—Maintenance	4,663	..	4,663		
Total	37,00,554	25,594	37,26,148	..	36,41,099

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project.

No. 2.—CAPITAL ACCOUNTS FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Expenditure against closed Estimates.	Cost of construction as now estimated.
	Imperial.				
	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
4.—DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary Expenses	21,356	...	21,356		
B.—Land	13,638	...	13,638		
C.—Works	2,884	..	2,884		
L.—Earthwork	52,353	...	52,353		
O.—Miscellaneous	1,759	...	1,759		
TOTAL	91,990	...	91,990	...	91,990
TOTAL I.—WORKS	1,31,95,369	2,22,850	1,34,18,219	1,27,15,716	1,47,07,371
II.—ESTABLISHMENT.					
5.—DIRECTION AND ACCOUNTS	23,26,408	95,011	(a) 24,21,419		
6.—EXECUTIVE					
7.—MEDICAL					
8.—SPECIAL SURVEY					
TOTAL	23,26,408	95,011	24,21,419	24,21,419	26,29,222
III.—TOOLS AND PLANT.					
9.—NAVIGATION PLANT	3,75,788	7,033	3,82,821		
12.—MISCELLANEOUS					
13.—REPAIRS AND CARRIAGE					
TOTAL	3,75,788	7,033	3,82,821	3,82,821	3,93,656
IV.—SUSPENSE ACCOUNT.					
14.—STOCK	4,26,654	—10,416	4,16,238		
15.—STOCK PURCHASES	—514	—13,766	—14,280		
16.—MISCELLANEOUS ADVANCES	7,785	—6,734	1,051		
18.—LONDON STORES .. .. .	..	..	...
TOTAL	4,33,925	—30,016	4,03,909	...	3,01,049
GRAND TOTAL	1,63,31,490	2,93,978	1,66,25,468	1,55,19,956	1,80,32,198
V.—LESS RECEIPTS ON CAPITAL ACCOUNT	62,609	..	62,609	62,609	62,609
NET TOTAL	1,62,68,881	2,93,978	1,65,62,859	1,54,57,347	1,79,69,589
APPORTIONMENT.					
49.—IRRIGATION WORKS	1,62,68,881	2,93,978	1,65,62,859		

(a) Excludes Accounts Establishment charges from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ..	3,15,71,215	27,55,092	3,43,26,307	1.—EXTENSIONS AND IMPROVEMENTS.			
Sales of water ..	1,28,631	12,354	1,40,985	1. HEAD WORKS ..	4,87,806	44,523	5,32,329
Supply of towns ..	6,526	1,067	7,593	2. MAIN CANAL AND BRANCHES.	2,08,916	17,788	2,24,704
Receipts from Plantations ..	43,380	11,132	54,518	3. DISTRIBUTARIES ..	2,93,971	13,402	3,07,363
Receipts from other Canal produce.	11,536	538	12,074	4. DRAINAGE AND PROTECTIVE WORKS.	9,631	1,017	11,578
Water power ...	2,43,017	30,006	2,82,923	TOTAL 1 ..	9,08,224	77,750	10,75,974
Rent of Buildings ..	1,05,131	6,298	1,11,430	2.—MAINTENANCE AND REPAIRS.			
Fines ..	12,329	1,237	13,566	1. HEAD WORKS ...	8,57,315	62,097	9,20,342
Miscellaneous and other Receipts.	1,32,554	7,860	1,40,714	2. MAIN CANAL AND BRANCHES.	21,05,134	1,32,098	23,27,232
Total ..	3,22,51,628	28,35,482	3,50,90,110	3. DISTRIBUTARIES ...	20,18,523	1,01,114	21,19,637
				4. DRAINAGE AND PROTECTIVE WORKS	73,473	3,615	77,088
				TOTAL 2 ...	51,44,475	2,99,824	54,44,299
				3.—COMPENSATION ...	6,179	...	6,179
				4.—ESTABLISHMENT ..	34,02,773	1,00,977	35,03,750
				5.—DIRECTION AND ACCOUNT.			(c)
				6. EXECUTIVE ESTABLISHMENT.			
				7. MEDICAL Do.			
				7A.—REVENUE Do.	27,20,490	3,84,370	31,04,860
				TOTAL ...	61,23,263	5,45,347	66,68,610
				5.—TOOLS AND PLANT			
Share of Land Revenue collected in the Civil Department.	1,26,55,982	13,85,015	1,40,40,997	1. SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
Interest on sale-proceeds of waste lands benefited.	8,60,031	72,522	9,33,156	2. PLANT AND MACHINERY	2,18,036	11,916	2,29,952
				3. TOOLS ..			
				4. NAVIGATION PLANTS ...			
				5. CAMP EQUIPAGE ...			
				6. LIVE STOCK ..			
				7. OFFICE FURNITURE ..			
				8. MISCELLANEOUS ..			
				9. REPAIRS AND CARRIAGE			
				TOTAL ...	2,18,036	11,916	2,29,952
				6.—REFUNDE OF REVENUE.	10,010	391	11,001
				7.—PROFIT AND LOSS			
				TOTAL ..	1,26,00,787	9,35,228	1,34,36,016
				Indirect charges debitable to Revenue Account as per Account No. 5.	8,58,132	70,373	9,34,505
Total ..	1,35,16,016	14,57,537	1,49,74,153	TOTAL CHARGES ...	1,33,58,919	10,11,601	1,43,70,520
TOTAL RECEIPTS ...	4,57,71,244	42,93,019	5,00,61,263	Balance Net Revenue ...	3,21,12,325	32,81,418	3,50,03,743
				GRAND TOTAL ..	4,57,71,244	42,93,019	5,00,61,263

(c) Excludes share of Accounts Establishment from 1912-13 to 1917-18.

IRRIGATION BRANCH.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount		Amount.
	Rs.		Rs.
Total Interest charges to end of 1918-19 ..	94,07,416	Net Revenue realized to end of 1918-19 ...	3,24,12,325
Do. for the year 1919-20 ..		Do. during 1919-20 ...	32,81,418
Total outlay to end of 31st March 1917 =	Rs. 1,55,43,447		
Total outlay from 1st April 1917 to 31st March 1919.	Rs. 71,25,434		
Add $\frac{1}{2}$ outlay during 1919-20 ..	Rs. 1,40,989		
	8,72,423		
Interest at 3 4076% on Rs. 1,55,43,447	5,29,658		
Do. at 5 9328% on Rs. 8,72,423	51,759		
Total ..	1,00,48,833		
Balance Revenue after defraying interest charges ..	2,01,010		
Total ..	3,56,03,743	Total ..	3,56,93,743

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total
	Rs.	Rs. ,	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue ..	83,000	50	83,050
Leave and Pension Allowances ..	3,25,008	13,302	3,39,000
Total ..	4,08,608	13,352	4,22,050
REVENUE—			
Capitalization of abatement of Land Revenue ..	875	25	900
Leave and Pension Allowances ..	8,67,257	76,318	9,33,605
Total ..	8,68,132	76,373	9,34,505
GRAND TOTAL ..	12,66,830	89,725	13,56,555

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project.

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs. •
DIRECT CHARGES.								
Works ..	1,26,74,493	41,223	1,27,15,716	7,02,503	13,92,795	6,90,292	1,34,18,219	Secretary's No. 1088, dated 27th March 1919 .. 3,784 Secretary's No. 1086, dated 27th March 1919 .. 16,714 Secretary's No. 1742, dated 11th May 1918 .. 42,611 Secretary's No. 1160 W. I., dated 9th April 1918 .. 15,923 Secretary's No. 1728 W. I., dated 10th May 1918 .. 8,192 Secretary's No. 001 W. I., dated 22nd May 1918 .. 35,750 Secretary's No. 0904 W. I., dated 20th August 1918 .. 6,810 Secretary's No. 1039 W. I., dated 3rd September 1918 .. 28,297 Secretary's No. 1181 W. I., dated 19th September 1918 .. 23,440 Secretary's No. 2652 W. I., dated 21st November 1918 .. 8,813 Secretary's No. 2654 W. I., dated 27th November 1918 .. 13,252 Government of India, No. 3421, dated 9th December 1918 .. 3,09,736 Secretary's No. 807 W. I., dated 5th July 1919 .. 6,170 Secretary's No. 1019, dated 22nd March 1919 .. 9,088 Secretary's No. 1047, dated 22nd March 1919 .. 40,544 Secretary's No. 073 W. I., dated 4th October 1917 .. 1,017 Secretary's No. 2910, dated 13th November 1917 .. 95,161 Secretary's No. 2031, dated 13th November 1917 .. 2,432 Secretary's No. 3013, dated 17th November 1917 .. 7,827 Secretary's No. 491, dated 8th February 1918 .. 9,848 Secretary's No. 578, dated 11th February 1918 .. 2,297 Secretary's No. 807, dated 4th March 1918 .. 6,421 Secretary's No. 1896, dated 20th May 1919 .. 2,066 Government of India, No. 142 I., dated 27th May 1919 .. 2,05,638 Government of India, No. 531, dated 22nd February 1919 .. 91,108 Secretary's No. 0188 W. I., dated 26th June 1919 .. 32,292 Secretary's No. 0873, dated 10th September 1919 .. 10,235 Secretary's No. 0671, dated 10th September 1919 .. 6,661 Government of India, No. 271 I., dated 16th September 1919 .. 75,601 Secretary's No. 01107 W. I., dated 9th October 1919 .. 20,816 Secretary's No. 2755 W. I., dated 21st November 1919 .. 8,829 Secretary's No. 2696 W. I., dated 19th November 1919 .. 29,435 Secretary's No. 2735 W. I., dated 20th November 1919 .. 23,007 Secretary's No. 2767 W. I., dated 21st November 1919 .. 25,510 Secretary's No. 2759 W. I., dated 21st November 1919 .. 13,669 Secretary's No. 2701 W. I., dated 21st November 1919 .. 11,402
Establishment ..	21,90,858	2,30,561	24,21,419	..	3,06,473	3,06,473	24,21,419	..
Tools and Plant ..	3,62,956	18,866	3,81,821	..	20,745	20,745	3,82,821	..
Suspense Balance ..	..	..	..	4,03,009	..	4,03,009	4,03,009	..
Total ..	1,52,28,307	2,91,649	1,55,19,956	11,05,512	17,20,013	6,14,501	1,66,25,468	
Less Receipts on Capital Account.	62,609	..	62,609	..	..	..	62,609	
Net Total ..	1,51,65,698	2,91,649	1,54,57,347	11,05,512	17,20,013	6,14,501	1,65,62,859	
Carried over ..	1,51,65,698	2,91,649	1,54,57,347	11,05,512	17,20,013	6,14,501	1,65,62,859	Carried over .. 13,80,747

(a) Completion Schedule sanctioned in Secretary of State's despatch No. P. W. 8, dated 5th February 1920 for a total amount of Rs. 1,81,20,000. Direct charges Rs. 1,79,69,580 and Indirect charges 4,51,001.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Jhelum Canal Project

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Brought forward ..	1,51,85,698	2,91,649	1,54,57,347	11,05,512	17,20,013	6,14,501	16,562,359	Brought forward 13,50,747
INDIRECT CHARGES.								Secretary's No. 2763 W. I., dated 21st November 1919 .. 12,637
								Secretary's No. 2765 W. I., dated 21st November 1919 .. 1,735
								Secretary's No. 2767 W. I., dated 21st November 1919 .. 12,102
								Secretary's No. 2769 W. I., dated 21st November 1919 .. 4,563
								Secretary's No. 2771 W. I., dated 21st November 1919 .. 1,221
								Secretary's No. 2813 W. I., dated 24th November 1919 .. 30,732
								Secretary's No. 2815 W. I., dated 24th November 1919 .. 2,441
								Secretary's No. 2817 W. I., dated 24th November 1919 .. 0,470
								Secretary's No. 2819 W. I., dated 24th November 1919 .. 10,109
								Secretary's No. 2821 W. I., dated 24th November 1919 .. 5,327
Capitalized abatement of Land Revenue.	83,000	50	83,050	...	...	..	83,050	Secretary's No. 2823 W. I., dated 24th November 1919 .. 1,379
								Secretary's No. 2825 W. I., dated 24th November 1919 .. 12,294
								Secretary's No. 2827 W. I., dated 24th November 1919 .. 0,151
								Secretary's No. 2829 W. I., dated 24th November 1919 .. 5,330
								Secretary's No. 2831 W. I., dated 24th November 1919 .. 2,276
								Secretary's No. 2833 W. I., dated 24th November 1919 .. 1,870
								Secretary's No. 2835 W. I., dated 24th November 1919 .. 3,285
Leave and Pension Allowances.	3,06,721	32,219	3,39,000	..	..	..	3,39,000	Secretary's No. 2837 W. I., dated 24th November 1919 .. 31,879
								Secretary's No. 2839 W. I., dated 24th November 1919 .. 2,915
								Secretary's No. 2841 W. I., dated 24th November 1919 .. 20,648
								Secretary's No. 2843 W. I., dated 24th November 1919 .. 5,957
								Secretary's No. 2870 W. I., dated 26th November 1919 .. 21,874
								Secretary's No. 72 W. I., dated 2nd January 1920 .. 2,037
								Government of India, No. 394 I., dated 20th December 1918 { 40,675
								Secretary's No. 0621, dated 19th July 1918 .. 8,970
								Total .. 17,10,013
Total ..	3,89,721	32,320	4,22,050	..	..	..	4,22,050	
GRAND TOTAL ..	1,55,56,419	3,23,078	1,58,79,397	11,05,512	17,20,013	6,14,501	1,69,84,908	

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Indus Inundation Canals Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919 20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction Estimate closed on 31st March 1894.)	Expenditure against closed Estimate.
	IMPERIAL.				
	Previous.	1919-20.	Total.		
I. WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.
2. MAIN CANAL AND BRANCHES.					
A. Preliminary Expenses	9,321	..	9,321		
B. Land	53,193	..	53,193		
D. Regulators	77,205	..	77,205		
E. Falls and Weirs	34,956	..	34,956		
F. River and Hill Torrent Works ..	402	..	402		
G. Bridges	46,971	..	46,971		
H. Escapes	14,031	..	14,031		
K. Buildings	1,49,097	—14	1,49,083		
L. Earthwork	13,52,682	..	13,52,682		
O. Miscellaneous	24,588	..	24,588		
Total	17,02,446	—14	17,02,432		
3. DISTRIBUTARIES.					
A. Preliminary Expenses	3,987	..	3,987		
B. Land	38,157	..	38,157		
C. Works	76,087	..	76,087		
L. Earthwork	1,88,142	..	1,88,142		
D. Miscellaneous	8,536	..	8,536		
Total	3,14,909	..	3,14,909		

IRRIGATION BRANCH:

PUNJAB PROVINCE,

OFFICE OF ACCOUNTANT-GENERAL:

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1910-20.

Indus Inundation Canals Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1910-20.

HEADS OF ACCOUNT.					DIRECT CHARGES.			Cost of construction as now estimated (Construction estimate closed on 31st March 1894.)	Expenditure against closed Estimate.
					Imperial.				
					Previous.	1910-20.	Total.		
					Rs.	Rs.	Rs.	Rs.	Rs. ✓
4. DRAINAGE AND PROTECTIVE WORKS—									
K.—Buildings... ..					1,613	..	1,613		
L.—Earthwork					3,43,078	..	3,43,078		
TOTAL ..					3,44,691	..	3,44,691		
TOTAL I.—WORKS ..					24,22,036	— 14	24,22,032	24,22,032	24,22,032
II.—ESTABLISHMENT.									
5. DIRECTION AND ACCOUNT (a)					4,58,456	— 4	4,58,452		
6. EXECUTIVE									
7. MEDICAL					667	..	667		
TOTAL ..					4,59,023	— 4	4,59,019	4,59,019	4,59,019
III.—TOOLS AND PLANT.									
12. MISCELLANEOUS					25,000	..	25,000		
13. REPAIRS AND CARRIAGE.. ..									
TOTAL ..					25,000	..	25,000	25,000	25,000 ✓
IV.—SUSPENSE ACCOUNT.									
14. STOCK					53,013	— 3,388	55,625		
15. STOCK PURCHASES					— 222	222	— 1		
16. MISCELLANEOUS ADVANCES					272	96	368		
16. LONDON STORES .. ..					..	..	..
TOTAL ..					52,063	— 3,062	55,994		
GRAND TOTAL ..					29,65,212	— 3,007	29,62,125	29,66,131	29,66,131
V. LESS RECEIPTS ON CAPITAL ACCOUNT ..					6,885	20	6,861	63,861	63,861
NET TOTAL ..					29,01,360	— 3,110	28,98,250	28,98,250	28,98,250
APPORTIONMENT.									
40. IRRIGATION WORKS					21,78,847	— 3,110	21,75,720		
42. M. W. NAVIGATION, IMPERIAL					7,22,513	..	7,22,513		

(c) Excludes share of Accounts Establishment from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Indus Inundation Canals Project.

No. 2.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	1.—EXTENSIONS AND IMPROVEMENTS.	Rs.	Rs.	Rs.
Occupiers' rates ..	26,32,608	1,01,681	27,94,349	2.—MAIN CANAL AND BRANCHES	10,84,837	8,780	10,93,617
Owners' rates on irrigated land	92,189	..	92,189	3.—DISTRIBUTARIES ..	77,730	444	78,183
				4.—DRAINAGE AND PROTECTIVE WORKS.	10,32,362	9,909	10,42,361
				TOTAL I A. ..	21,94,928	19,223	22,14,161
Sales of water ..	0,188	233	0,418	2.—MAINTENANCE AND REPAIRS.			
Supply of town ..	1,418	..	1,418	2.—MAIN CANAL AND BRANCHES.	68,61,910	1,04,377	69,56,287
Receipts of plantations ..	1,38,480	4,131	1,42,617	3.—DISTRIBUTARIES ..	3,64,661	15,309	3,79,930
Govt. share of Dhundi Produce	11,63,679	..	11,63,679	4.—DRAINAGE WORKS ..	10,82,067	17,730	10,99,847
Receipts from other Canal Produce.	6,440	12	6,452	TOTAL I B. ..	82,98,538	1,37,828	84,36,064
Rent of Buildings ..				3.—COMPENSATION ..	6,250	..	6,250
Fines ..	1,56,806	73,500	2,30,312	4.—ESTABLISHMENT ..	..	
Miscellaneous and other receipts				5.—DIRECTION AND ACCOUNT ..			
Total ..	41,95,871	2,30,663	44,35,434	6.—EXECUTIVE ESTABLISHMENT ..	35,59,328	038	35,60,266
				7.—MEDICAL ESTABLISHMENT ..	(a)		
Contribution of Silt Clearance ..	4,18,034	..	4,18,034	7A.—REVENUE ESTABLISHMENT	7,42,139	1,33,317	8,75,456
Clearance Rates ..	12,79,605	..	12,79,605	7C.—PLANTATION ESTABLISHMENT	5,946	..	5,946
Total ..	56,94,410	2,39,663	61,33,973	TOTAL ..	42,07,413	1,34,255	44,41,668
Share of Land Revenue collected in the Civil Department.	1,12,37,762	2,93,221	1,15,30,983	5.—TOOLS AND PLANT.			
Interest on sale-proceeds of waste lands benefited.	40	2	48	1.—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
Total ..	1,12,37,808	2,93,223	1,15,31,031	2.—PLANTS & MACHINERY ..			
				3.—TOOLS ..			
				4.—NAVIGATION PLANT ..	76,841	607	77,148
				5.—CAMP EQUIPAGE ..			
				6.—LIVE STOCK ..			
				7.—OFFICE FURNITURE ..			
				8.—REPAIRS & CARRIAGE ..			
				9.—MISCELLANEOUS ..			
				TOTAL ..	76,541	607	77,148
				6.—REFUNDS OF REVENUE	4,912	26	4,938
				7.—PROFIT AND LOSS ..	1,590	..	1,590
				TOTAL ..	1,48,00,181	2,01,627	1,50,11,818
				Indirect Charges debitable to Revenue Account as per Account No. 6.	7,11,007	18,816	7,29,043
				TOTAL CHARGES ..	1,56,01,278	3,10,443	1,59,11,761
				Balance Net Revenue ..	-15,30,910	2,22,503	17,53,213
				GRAND TOTAL ..	1,71,32,218	5,32,786	1,76,65,004
[F] TOTAL RECEIPTS ..	1,71,32,218	5,32,786	1,76,65,004				

(a) Excludes share of Accounts Establishment from 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Indus Inundation Canals Project.

No. 4.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

	Rs.	Amount,		Amount.
Total Interest charges to end of 1918-19		Rs. 22,37,967	Net Revenue realized to end of 1918-19 ..	Rs. 15,30,940
Total outlay to end of 31st March 1917 ..	29,01,976		Do. during 1918-20 ..	2,22,302
Total outlay from 1st April 1917 to 31st March 1919 ..	—610		Balance net Interest charges ..	5,83,484
Add half outlay during 1919-20 ..	—1,558			
	—2,174			
Interest at 3.4076 on Rs. 29,01,976 ...	..	98,888		
Interest at 5.9328 on Rs. % —2,174 ...	..	—129		
Total ..		23,36,726	Total ..	23,30,726

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue ...	8,657	..	8,657
Leave and Pension Allowances ..	71,728	—1	71,727
Total ...	80,385	—1	80,384
REVENUE—			
Capitalization of abatement of Land Revenue ..	20,853	50	20,933
Leave and Pension Allowances ...	6,84,214	18,706	7,03,010
Total ..	7,11,097	18,846	7,29,943
GRAND TOTAL ..	7,91,482	18,845	8,10,327

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
DIRECT CHARGES—								
Works ...	6,63,648	17,58,384	24,22,032	..	..	..	24,22,032	
Establishment ..	87,204	3,71,515	4,59,019	..	..	..	4,59,019	
Tools and Plant ..	670	24,410	25,080	..	..	..	25,080	
Suspense Balance ...	..	..	..	55,993	..	—55,993	55,993	
Total ..	7,51,522	21,54,609	29,06,131	55,993	..	—55,993	29,02,124	
Less Receipts on Capital Account..	63,852	20	63,881	..	..	..	63,881	
NET TOTAL ..	6,87,670	21,54,589	28,42,250	55,993	..	—55,993	28,98,243	
INDIRECT CHARGES—								
Capitalized abatement of Land Revenue ...	57	8,600	8,657	..	..	..	8,657	
Leave and Pension Allowances ..	19,672	52,055	71,727	..	..	..	71,727	
TOTAL ..	19,729	60,655	80,384	..	..	..	80,384	
GRAND TOTAL ...	7,07,399	22,15,285	29,22,634	55,993	..	—55,993	29,78,627	

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Chenab Canal Project

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated, (Construction Estimate closed on 31st March 1917).	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
I.—WORKS.					
I.—HEAD WORKS—					
A.—Preliminary Expenses	8,284	..	8,284		
B.—Land	94,615	..	94,615		
C.—Works	65,11,161	..	65,11,161		
K.—Buildings	1,92,430	593	1,93,032		
O.—Miscellaneous	75,318	—165	75,153		
P.—Maintenance	1,35,343	..	1,35,343		
Q.—Losses of Stock...	7,317	..	7,317		
TOTAL	70,24,477	428	70,24,905		
2.—MAIN CANAL AND BRANCHES :—					
A.—Preliminary Expenses	77,791	110	77,877		
B.—Land...	9,71,910	—60	9,71,850		
D.—Regulators	7,08,092	912	7,09,004		
E.—Falls and Weirs	9,50,027	..	9,50,027		
F.(1)—Other Cross Drainage Works	22,74,588	..	22,74,588		
G.—Bridges	15,80,591	5,529	15,86,120		
K.—Buildings	8,88,091	40,533	9,28,624		
L.—Earthwork	69,49,797	5,206	69,55,003		
M.—Plantations	65,966	..	65,966		
O.—Miscellaneous	68,754	1,790	70,544		
P.—Maintenance	3,20,977	..	3,20,977		
Q.—Losses of Stock ..	12,374	..	12,374		
TOTAL	1,48,77,628	54,026	1,49,31,654		
3.—DISTRIBUTARIES—					
A.—Preliminary Expenses	1,43,748	21	1,43,769		
B.—Land	6,55,720	2,297	6,58,017		
C.—Works	10,52,295	5,705	10,58,000		
L.—Earthwork	19,37,919	4,580	19,42,499		
O.—Miscellaneous	3,15,720	—1,49,955	1,65,765		
P.—Maintenance	14,308	..	14,308		
TOTAL	47,19,710	—1,37,362	45,82,448		

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Chenab Canal Project.

No 2—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES			Cost of construction as now estimated (Construction Estimate closed on 31st March 1917.)	Expenditure against closed Estimates.
	Imperial.				
	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
4. DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary Expenses	10,515	2,555	13,070		
B.—Land	1,04,981	..	1,04,981		
C.—Works	40,800	..	40,800		
L.—Earthwork	10,46,202	458	10,46,660		
O.—Miscellaneous	17,382	..	17,382		
TOTAL	12,19,880	3,013	12,22,893		
TOTAL I.—WORKS	2,78,41,695	—79,795	2,77,61,900	2,78,13,846	2,76,06,946
II.—ESTABLISHMENT.					
5. DIRECTION AND ACCOUNTS			(a) 44,61,369		
6. EXECUTIVE	44,80,389	—29,020			
7. MEDICAL					
18. SPECIAL SURVEY	82,573	..	82,573		
8 ¹ . SPECIAL FIXED SURVEY	110	..	110		
LEAVE AND PENSION ALLOWANCES .. ..	..	..	..
TOTAL	45,63,072	—29,020	45,34,052	45,68,161	45,34,052
III.—TOOLS AND PLANT.					
1. SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS ..	688				
2. PLANT AND MACHINERY	5,221				
3. TOOLS	2,250				
4. NAVIGATION PLANT	1,161				
5. CAMP EQUIPAGE	35				
6. LIVE STOCK	571	—3,041	21,89,529		
7. OFFICE FURNITURE	2,015				
8. REPAIRS AND CARRIAGE	1,25,845				
11. RAILWAY PLANT AND ROLLING STOCK	8,55,370				
12. MISCELLANEOUS	11,99,411				
TOTAL	21,92,570	—3,041	21,89,529	21,91,820	21,89,529
IV.—SUSPENSE ACCOUNT.					
14. STOCK	7,34,022	—29,919	6,94,103		
15. STOCK PURCHASES	—1,713	—9,938	—11,651		
16. MISCELLANEOUS ADVANCES	6,103	915	7,018		
17. LONDON STORES .. ..	..	76	76		
TOTAL	7,38,412	—48,866	6,89,546		
GRAND TOTAL	3,53,35,749	—1,60,722	3,51,75,027	3,45,73,827	3,43,30,527
V.—LESS RECEIPTS ON CAPITAL ACCOUNT	5,64,057	55,669	6,19,726	6,19,726	6,19,726
NET TOTAL	3,47,71,692	—2,16,391	3,45,55,301	3,39,54,101	3,37,10,801
APPORTIONMENT.					
49. IRRIGATION WORKS	3,46,63,821	—2,16,391	3,44,47,430		
43. M. AND NAVIGATION	1,07,871	..	1,07,871		

(a) Share of Accounts Establishment excluded from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL..

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Chenab Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupier's rates ..	82,77,392	26,05,672	1,08,83,064	(1)—EXTENSIONS AND IMPROVEMENTS.			
				1.—HEAD WORKS ..	41,973	36,330	78,303
				2.—MAIN CANAL & BRANCHES..	2,74,972	18,860	2,93,841
				3.—DISTRIBUTARIES ..	18,203	27,404	45,607
Sales of water ..	3,500	532	4,032	4.—DRAINAGE AND PROTECTIVE WORKS.	45	5,104	5,149
				TOTAL (1) ..	3,35,193	87,707	4,22,900
				2.—MAINTENANCE AND REPAIRS.			
Water supply of towns ..	1,814	—	1,814	1.—HEAD WORKS ..	3,83,697	36,577	4,00,274
				2. MAIN CANAL & BRANCHES..	11,76,240	2,49,155	14,25,395
				3.—DISTRIBUTARIES ..	10,53,940	2,45,489	12,99,429
Receipts from plantation..	2,537	753	3,340	4.—DRAINAGE WORKS ..	1,29,041	12,682	1,41,723
				TOTAL (2) ..	27,22,918	5,43,903	32,66,821
				(3)—COMPENSATION ..	61,389	3,026	64,415
Receipts from other Canal produce.	1,721	112	1,833	(4)—ESTABLISHMENT.			
				5.—DIRECTION AND ACCOUNT			(5)
				6.—EXECUTIVE ESTABLISHMENT..	10,25,049	2,30,806	10,70,272
				(a)	—1,76,583		
				7A.—REVENUE ..	9,09,034	4,88,117	15,74,634
Rent of buildings ..	35,708	5,718	41,426	(a)	+1,76,583		
				TOTAL (3) ..	19,34,953	7,18,923	26,53,876
				(5)—TOOLS AND PLANT.			
Fines ..	5,936	3,042	8,978	1.—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
				2.—PLANT AND MACHINERY ...	33,841	24,146	57,987
				12.—MISCELLANEOUS ..			
				13.—RETAINS AND CARRIAGE ..			
Miscellaneous and other receipts.	1,15,732	21,102	1,38,834	TOTAL ..	33,841	24,146	57,987
				(6)—REFUNDS OF REVENUE	6,914	615	7,529
TOTAL ..	84,44,390	26,38,931	1,10,83,321	TOTAL ..	50,05,228	13,78,320	64,73,558
Interest on sale-proceeds of waste lands benefited.	3,31,923	1,30,723	4,62,646	Indirect charges debitable to Revenue Accounts as per Account No. 6.	2,71,147	1,00,899	3,72,046
Share of land revenue ..	6,64,400	36	6,61,526	Total charges ..	53,76,095	14,79,219	68,45,004
				Balance Net Revenue ..	40,74,418	12,90,471	53,04,889
Total ..	9,06,413	1,30,760	11,27,172	GRAND TOTAL ..	91,40,803	27,69,690	1,22,10,493
TOTAL RECEIPTS ..	94,40,803	27,69,690	1,22,10,493				

(a) Adjustment of Revenue Establishment wrongly charged against Executive Establishment.

(b) Excluding share of Accounts Establishment from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Chenab Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Amount.		Amount.
Rs.	Rs.	Rs.	Rs.
Total Interest charges to end of 1918-19	1,07,20,681	Net revenue realized to end of 1918-19	40,74,418
Do, do, for the year 1919-20 :—		Do. do. during 1919-20	12,60,471
Total outlay to end of 31st March 1917 .. 3,43,61,637		Balance, not interest charges	65,44,608
Total outlay from 1st April 1917 to 31st March 1919 4,10,055			
Add half outlay during 1919-20 —1,08,195			
Total .. 3,01,860			
Interest at 3'4076 per cent. on Rs. 3,43,61,637	11,70,907		
Do. at 5'9328 per cent. on Rs. 3,01,860	17,009		
Total .. 1,19,09,497		Total .. 1,19,09,497	

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS,	Previous.	1919-20.	Total.
Rs.	Rs.	Rs.	Rs.
CAPITAL—			
Capitalization of abatement of Land Revenue	3,66,375	..	3,66,375
Leave and Pension Allowances	6,21,500	—4,063	6,27,437
Total	9,97,875	—4,063	9,93,812
REVENUE—			
Capitalization of abatement of Land Revenue	250	250	500
Leave and Pension Allowances	2,70,897	1,00,649	3,71,546
Total	2,71,147	1,00,899	3,72,046

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Chenab Canal Project.

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONS.									
PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.	
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.			
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		
DIRECT CHARGES.									
Works	2,75,59,192	47,754	2,76,06,946	1,54,004	2,06,900	51,946	2,77,81,900	Sanction to complete schedule is awaited— G. I. No. 3—1, dated 4th January 1918 ... 53,885 I. B. O. No. 0583, dated 10th July 1918 ... 871 I. B. O. No. 0581, dated 16th July 1918 ... 4,532 I. B. O. No. 0579, dated 16th July 1918 ... 2,894 I. B. O. No. 0577, dated 16th July 1918 ... 3,999 I. B. O. No. 254, dated 20th January 1919 ... 6,793 I. B. O. No. 291 W. I., dated 22nd January 1919 ... 11,097 I. B. O. No. 316, dated 24th January 1919 ... 18,358 I. B. O. No. 124, dated 8th January 1919 ... 6,782 I. B. O. No. 122, dated 8th January 1919 ... 1,484 I. B. O. No. 313, dated 24th January 1919 ... 13,091 I. B. O. No. 293, dated 22nd January 1919 ... 5,230 I. B. O. No. 532, dated 10th February 1919 ... 15,408 I. B. O. No. 1045, dated 22nd March 1919 ... 5,776 I. B. O. No. 1232 W. I., dated 8th April 1919 ... 35,14 I. B. O. No. 1234 W. I., dated 8th April 1919 ... 20,329 I. B. O. No. 1340 W. I., dated 19th April 1919 ... 5,250 I. B. O. No. 2574, dated 10th October 1919 ... 1,952 I. B. O. No. 2775, dated 21st November 1919 ... 3,256 I. B. O. No. 2819, dated 14th November 1919 ... 2,830 I. B. O. No. 242, dated 24th January 1920 ... 1,176 I. B. O. No. 339, dated 31st February 1920 ... 2,700 I. B. O. No. 1003, dated 12th March 1920 ... 1,411 I. B. O. No. 1146, dated 19th March 1920 ... 14,54 I. B. O. No. 367, dated 10th March 1920 ... 2,27 I. B. O. No. 970, dated 10th March 1920 ... 2,2	
Establishment	44,87,333	46,710	45,34,052	..	34,100	34,100	45,34,052		
Tools and Plant	21,90,145	— 616	21,89,529	..	2,291	2,291	21,89,529		
Suspense Balance	..	..	..	0,80,546	..	— 6,89,546	6,89,546	
Total	3,42,30,673	93,854	3,43,30,527	8,44,500	2,43,300	— 6,01,200	3,51,75,027		
Less Receipts on Capital Account.	5,50,863	50,861	6,19,720	..	..	..	6,19,720	
Net Total	3,36,79,810	33,993	3,37,10,801	8,44,500	2,43,300	— 6,01,200	3,45,55,301		
INDIRECT CHARGES.									
Capitalized abatement of Land Revenue.	3,59,069	0,726	3,60,375	..	..	..	3,60,375	
Leave and Pension Allowance.	6,29,897	6,519	6,27,437	..	..	..	6,27,437	
Total	9,88,966	13,245	9,93,812	..	..	..	9,93,812	
GRAND TOTAL	4,40,57,356	47,258	4,40,84,614	8,44,500	2,43,300	— 6,01,200	4,40,84,614	Total ... 2,43,8	

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Bari Doab Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated, (Construction Estimate closed on 31st March 1917.)	Expenditure against closed Estimate.
	Imperial.				
	Previous.	1910-20.	Total.		
II.—ESTABLISHMENT.	Rs.	Rs.	Rs.	Rs.	Rs.
3. DIRECTION AND ACCOUNTS	31,57,879	44,273	32,02,152	...	...
9. EXECUTIVE					
7. SPECIAL SURVEY					
TOTAL ..	31,57,879	44,273	32,02,152	32,43,846	32,02,152
III.—TOOLS AND PLANT.					
1. SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.	19,50,744	4,784	19,55,528	...	...
2. PLANT AND MACHINERY					
3. TOOLS					
4. NAVIGATION PLANT					
5. CAMP EQUIPAGE					
6. LIVE STOCK					
7. OFFICE FURNITURE					
8. REPAIRS AND CARRIAGE					
9. MISCELLANEOUS					
10. RAILWAY PLANT AND ROLLING STOCK ..					
TOTAL ..	19,50,744	4,784	19,55,528	19,58,379	19,55,528
IV.—SUSPENSE ACCOUNT.					
41. STOCK	6,84,725	—31,368	6,53,357	...	...
15. STOCK PURCHASES	—4,869	—15,179	—20,048	...	...
16. STOCK SALES	650	...	650	...	...
17. MISCELLANEOUS ADVANCES	30,200	—16,161	14,045	...	...
18. LONDON INVOICES .. ..	..	...	...	...	...
19. LONDON STORES .. ..	..	...	...	...	...
TOTAL ..	7,10,712	—62,708	6,48,004	...	...
GRAND TOTAL, ..	2,26,08,813	1,20,000	2,28,18,819	2,24,10,876	2,21,70,816
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.	5,98,001	15,512	5,43,513	5,43,513	5,43,513
NET TOTAL ..	2,21,70,812	1,04,494	2,22,75,306	2,18,67,363	2,16,27,302
APPORTIONMENT.					
49.—IRRIGATION WORKS	2,20,03,291	1,04,494	2,21,07,785	...	...
43.—M. W. AND NAVIGATION, IMPERIAL ..	1,07,521	...	1,07,521	...	...

(a) Excludes share of Accounts Establishment from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Bari Doab Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates	61,01,106	26,68,544	77,69,650	1.—EXTENSIONS AND IMPROVEMENTS.			
				1. HEAD WORKS ..	34,596	8,513	43,109
				2. MAIN CANAL AND BRANCHES	70,619	40,184	1,10,803
				3. DISTRIBUTARIES ..	61,325	49,007	1,10,422
Sales of water	48,901	10,043	68,544	4. DRAINAGE AND PROTECTIVE WORKS.	4,831	2,682	7,513
				TOTAL (1) ...	1,71,371	1,00,376	2,71,847
				2.—MAINTENANCE AND REPAIRS.			
Receipts from Plantations ..	14,831	3,395	18,226	1. HEAD WORKS ..	2,43,032	67,402	3,11,334
				2. MAIN CANAL AND BRANCHES	8,36,686	2,20,540	10,66,235
				3. DISTRIBUTARIES ..	8,10,068	1,08,491	9,18,559
other Canal produce	1,981	431	2,465	4. DRAINAGE WORKS ...	12,525	1,532	14,057
				TOTAL (2) ..	19,04,111	4,06,974	23,71,085
				(3)—COMPENSATION ...			
				(4)—ESTABLISHMENT ..			
Water Power		1,074	1,074	5. DIRECTION AND ACCOUNTS	8,40,119	24,685	8,73,804
				6. EXECUTIVE ESTABLISHMENT		(b)	
				(7A) REVENUE Do. ..	6,80,452	5,84,623	12,74,075
				TOTAL ...	16,38,571	6,00,308	21,47,879
				(5)—TOOLS AND PLANT.			
Rep of Buildings	20,431	7,610	28,047	1. SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
				2. PLANT AND MACHINERY ..			
				3. TOOLS			
Fines	3,510	1,581	5,091	4. NAVIGATION PLANT ..	—8,720	20,309	11,589
				5. CAMP EQUIPAGE ..			
				6. LIVE STOCK			
Miscellaneous and other Receipts	1,07,223	77,732	1,84,955	7. OFFICE FURNITURE ..			
				8. REPAIRS AND CARRIAGE ..			
				MISCELLANEOUS ..			
				TOTAL ...	—8,720	20,309	11,589
				6.—REFUNDS OF REVENUE	2,200	1,406	3,696
Total	62,98,283	27,70,369	80,68,652	7.—PROFIT AND LOSS ..			
				TOTAL ...	36,07,533	11,08,663	48,06,096
Share of Land Revenue collected in the Civil Department.	21,20,422	13,23,770	34,53,193	Indirect Charges debitable to Revenue Account as per Account No. 6.	2,15,400	85,303	2,00,703
Interest on sale proceeds of waste land benefited.	10,10,783	4,09,523	14,80,262	TOTAL CHARGES ..	38,22,933	12,83,806	51,06,799
				Balance, Net Revenue ..	46,15,512	32,70,795	78,86,308
TOTAL RECEIPTS	94,38,445	45,63,662	1,30,02,107	GRAND TOTAL ..	94,38,445	45,63,662	1,30,02,107

(a). Excludes share of Accounts Establishment from 1912-13 to 1917-18.

(b). Purely revenue establishment Rs. 2,30,060 *pro rata* extra share on account of doubling up of the outlay, under 42—Revenue. Rs. 1,32,286 for 1919-20, and 1,08,277 for 1918-19 which was wrongly included in executive for 1918-19.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Bhari Doab Canal Project.

No. 4.—INTEREST ACCOUNT FOR AND TO END OF 1919-20.

	Rs.	Rs.		Rs.
Total Interest charges to end of 1918-19 .. ..	..	54,23,437	Net Revenue realized to end of 1918-19 ..	46,15,512
Do for the year 1919-20	2,14,20,273		Do. during 1919-20	32,79,796
Total outlay up to 31st March 1917 at 3.4,076% ..	7,29,917			
Outlay from 1-4-17 to 31-3-19=7,50,539 at 5.0,328 ..	44,538			
Interest at 5.0328 on half outlay during 1919-20, i.e., on Rs. 52,247 ..	3,100	7,77,545		
Total .. ..	..	62,00,982		
Balance Revenue after defraying interest charges ..	..	16,04,326		
Total .. ..	..	78,05,308	Total	78,05,308

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

PARTICULARS.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL.—			
Capitalization of Land Revenue	44,225	..	44,225
Leave and Pension Allowances	4,31,102	6,108	4,37,300
Total	4,75,387	6,108	4,81,585
REVENUE.—			
Leave and Pension Allowances	2,15,400	85,303	3,00,703
Total	2,15,400	85,303	3,00,703

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

Particulars.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions	Total.	Charges to date.	Amount of sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
DIRECT CHARGES.—								
Works	1,60,86,866	8,98,725	1,69,85,591	27,544	2,23,060	1,95,516	1,70,13,136	W. I. No. 2188, dated 10th May 1917 14,005
Establishment	30,07,003	1,95,140	32,02,152	..	41,004	41,004	32,02,152	W. I. No. 1094, dated 14th September 1917 9,471
Tools and Plant	10,34,767	20,701	10,55,468	..	2,851	2,851	10,55,468	W. I. No. 1391, dated 18th October 1917 10,810
Suspense balances .. ..	..	..	..	6,48,004	..	—6,48,00	6,48,004	W. I. No. 1397, dated 15th October 1917 3,282
Total	2,10,28,636	11,14,035	2,21,42,671	6,75,548	2,67,005	—4,07,943	2,28,18,819	W. I. No. 3130, dated 28th November 1917 2,253
Less Receipts on Capital Account	5,10,369	33,144	5,43,513	..	..	..	5,43,513	W. I. No. 240, dated 18th January 1918 3,014
Net Total	2,05,18,267	10,81,491	2,15,99,758	6,75,548	2,67,005	—4,07,943	2,22,76,306	W. I. No. 258, dated 19th January 1918 11,468
INDIRECT CHARGES.—								W. I. No. 352, dated 29th January 1918 10,535
Capitalized abatement of Land Revenue	43,950	275	44,225	..	..	..	44,225	W. I. No. 897, dated 12th March 1918 17,040
Leave and Pension Allowances	4,10,040	27,340	4,37,380	..	..	..	4,37,380	
Total	4,52,990	27,595	4,81,585	..	..	..	4,81,585	
GRAND TOTAL	2,09,72,257	11,09,080	2,20,81,337	6,75,548	2,67,005	—4,07,943	2,27,50,891	

IRRIGATION BRANCH.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Jhelum Canal Project.

No 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.					DIRECT CHARGES.			Cost of construction as now estimated, Rs.
					Imperial.			
					Previous.	1919-20.	Total.	
					Rs.	Rs.	Rs.	Rs.
I.—WORKS.								
1.—HEAD WORKS—								
A.—Preliminary Expenses	..	..	...	..	7,340	...	7,340	
B.—Land	..	..	...	..	11,020	..	11,020	
C.—Works	..	..	..	..	1,818	..	1,818	
K.—Buildings	..	..	..	..	2,01,645	...	2,01,645	
O.—Miscellaneous	..	..	...	..	37,417	...	37,417	
P.—Maintenance	..	..	...	..	14,972	...	14,972	
TOTAL					2,74,221	...	2,74,221	
2.—MAIN CANAL AND BRANCHES—								
A.—Preliminary Expenses	..	...	...	...	1,22,070	..	1,22,070	
B.—Land	..	..	...	..	9,32,187	..	9,32,187	
D.—Regulators	..	..	..	..	33,11,274	..	33,11,274	
E.—Falls and Weirs..	..	..	..	..	1,66,557	..	1,66,557	
F.—River and Hill Torrent Works	..	..	..	..	1,37,28,338	—14,707	1,37,13,631	
G.—Bridges	..	..	...	..	10,58,340	1,055	10,59,395	
H.—Escapes	..	..	..	..	2,59,177	..	2,59,177	
K.—Buildings	..	..	..	..	8,04,250	4,740	8,09,090	
L.—Earthwork	...	...	..	...	1,07,37,710	..	1,07,37,710	
M.—Plantations	..	..	..	..	54,843	..	54,843	
N.—Miscellaneous	...	..	...	..	62,166	..	62,166	
O.—Miscellaneous	...	..	...	..	4,02,080	..	4,02,080	
P.—Maintenance	..	..	..	..	4,577	..	4,577	
Q.—Losses on Stock..	..	..	..	...	4,577	..	4,577	
Total					3,16,43,678	—8,912	3,16,34,766	
3.—DISTRIBUTARIES—								
A.—Preliminary Expenses	..	..	..	..	37,250	305	37,555	
B.—Land	..	..	...	..	4,64,716	816	4,65,532	
C.—Works	..	...	..	..	8,14,194	13,060	8,27,254	
L.—Earthwork	...	...	..	...	7,75,288	17,219	7,92,507	
O.—Miscellaneous	..	..	..	..	5,30,658	—43,362	4,86,296	
Total					26,31,110	—11,962	26,19,148	

Upper Jhelum Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1910-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated.	Expenditure against closed estimates.
	Imperial.				
	Previous.	1910-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.
DRAINAGE AND PROTECTIVE WORKS—					
A.—Preliminary Expenses	7,706	312	8,018		
B.—Land	3	9	12		
C.—Works	1,017	130	1,147		
L.—Earthwork	7,230	4,487	11,746	..	..
O.—Miscellaneous	1,744	104	1,848		
TOTAL ..	17,729	5,042	22,771	..	..
TOTAL I.—WORKS ..	3,45,00,744	—15,832	3,45,50,912	3,45,38,007	3,43,86,355
II.—ESTABLISHMENT.					
3. DIRECTION AND ACCOUNT (a)	50,73,058	—8,608	50,64,900		
6. EXECUTIVE					
7. MEDICAL					
TOTAL ..	50,73,058	—8,608	50,64,990	50,97,541	50,54,990
III.—TOOLS AND PLANT.					
	40,13,415	342	40,13,757		
TOTAL ..	40,13,415	342	40,13,757	40,15,098	40,13,757
IV.—SUSPENSE ACCOUNT.					
14. STOCK	7,81,006	—60,101	7,11,904		
15. STOCK PURCHASES	—21,538	20,505	—730		
15a. STOCK SALES	2,590	—38,748	11,150		
16. MISCELLANEOUS ADVANCES	47,308				
17. LONDON INVOICES .. .. .	..	..	..
18. LONDON STORES .. .. .	..	..	..
TOTAL ..	8,09,758	—87,014	7,22,714		
GRAND TOTAL ..	4,50,53,575	—1,11,202	4,49,52,373	4,42,51,636	4,40,55,102
V.—LESS RECEIPTS ON CAPITAL ACCOUNT ..	9,70,054	3,08,914	13,41,868	13,41,868	13,44,565
NET TOTAL ..	4,40,87,521	—4,80,016	4,36,07,505	4,29,06,768	4,27,20,234
APPORTIONMENT.					
49. IRRIGATION WORKS	4,40,20,573	—4,80,016	4,35,40,557		
43. MINOR WORKS AND NAVIGATION, IMPERIAL ..	60,048	..	60,048		

(a) Excludes share of Accounts Establishment from 1912-13 to 1917-18.

IRRIGATION BRANCH

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Upper Jhelum Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	(1)—EXTENSIONS AND IMPROVEMENTS	Rs.	Rs.	Rs.
Water rates..	19,43,095	11,73,964	25,17,059	1.—HEAD WORKS ..	28,590	1,665	30,255
				2.—MAIN CANAL AND BRANCHES..	1,22,981	12,019	1,35,000
				3.—DISTRIBUTARIES ..	5,402	4,549	9,951
				4.—DRAINAGE PROTECTIVE WORKS	15	4,750	4,771
Sale of water	2,254	2,044	4,298	TOTAL 1 ..	1,56,988	22,989	1,79,977
				2.—MAINTENANCE AND REPAIRS			
				1.—HEAD WORKS ..	52,378	17,250	69,628
Receipts from plantations	1,384	1,019	2,403	2.—MAIN CANAL AND BRANCHES ..	11,80,375	2,63,236	14,43,611
				3.—DISTRIBUTARIES..	1,50,748	80,250	2,31,008
				4.—DRAINAGE WORKS ..	..	397	397
Receipts from other canal produce	..	85	85	TOTAL 2 ..	13,59,501	3,61,153	17,50,654
				3.—ESTABLISHMENT			
				5.—DIRECTION AND ACCOUNTS ..	..	71,924	7,04,257
Rents of Buildings	19,482	5,037	24,519	6.—EXECUTIVE ESTABLISHMENT ..	6,32,343		
				7.—MEDICAL ESTABLISHMENT ..	..	
				7 A.—REVENUE ESTABLISHMENT ..	2,37,451	4,67,128	7,04,579
Fines ..	1,933	1,143	3,076	TOTAL ..	8,69,794	5,39,352	14,09,146
				5.—TOOLS AND PLANT ..	9,329	12,651	21,980
Miscellaneous and other Receipts	60,391	18,602	78,993	TOTAL ..	9,329	12,651	21,980
				6.—REFUNDS OF REVENUE ..	176	5,559	5,835
Acresage rate	..	13,494	13,494	TOTAL ..	24,25,788	8,41,504	33,67,592
				Indirect Charges debitable to Revenue Account as per Account No 5	1,22,473	75,509	1,97,982
Total	14,28,539	12,15,388	26,43,927	TOTAL CHARGES ..	25,48,261	10,17,313	35,65,574
				Balance, Net Revenue	—11,18,722	1,98,676	—9,21,047
TOTAL RECEIPTS	14,28,539	12,15,388	26,43,927	GRAND TOTAL	14,28,539	12,15,388	26,43,927

(a). Excludes share of Accounts Establishment from 1912-13 to 1917-18.

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20

	Amount.		Amount.
	Rs.		Rs.
Total Interest charges to end of 1918-19	1,16,72,335	Net revenue realized to end of 1918-19 ..	—11,10,732
Total outlay to end of 31st March 1917 ...	4,30,11,584	Net revenue realised during 1919-20 ..	1,88,075
Total outlay from 1st April 1917 to 31st March 1919 ..	10,75,937	Balance net interest charges ..	1,40,10,239
Add half of an outlay 1919-20 ...	—2,40,008		
Interest @ 3·4·076 per cent. on Rs. 4,30,11,584	14,65,603		
Do. 5·9·328 per cent. on Rs. 8,35,929	49,594		
Total ...	1,30,88,592	Total ...	1,30,88,592

Particulars.	Previous.	1919-20.	Total.
CAPITAL—	Rs.	Rs.	Rs.
Capitalization of abatement of Land Revenue	2,07,150	275	2,07,425
Leave and Pension Allowances	7,05,302	—1,214	2,04,088
Total ..	9,12,452	—939	9,11,513
REVENUE—			
Capitalization of abatement of Land Revenue	700	..	700
Leave and Pension Allowances	1,21,773	75,509	1,97,282
Total ..	1,22,473	75,509	1,97,982
GRAND TOTAL ..	..	..	..

Particulars.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONED.			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
DIRECT CHARGES.								
Works ..	3,010,625	13,66,730	3,42,86,356	1,64,557	1,51,742	—12,815	3,45,50,012	Secretary's No. 1769, dated 14th May 1918 .. 20,222
Establishment ..	47,21,046	3,43,042	50,04,090	...	32,551	32,551	50,04,950	Secretary's No. 0447 W. I., dated 2nd July 1918 .. —1,522
Tools and Plant ..	45,91,767	21,090	40,73,757	..	2,241	2,241	46,13,757	Secretary's No. 2268, dated 20th June 1918 .. 16,243
Suspense Balance ..	—	...	..	7,22,714	..	—7,22,714	7,22,714	Secretary's No. 2270, dated 20th October 1918 .. 3,117
								Secretary's No. 095, dated 17th June 1919 .. 4,122
								Secretary's No. 01178, dated 9th October 1919 .. 10,014
								Secretary's No. 01180, dated 9th November 1919 .. 6,684
Total ..	4,23,33,340	17,31,762	4,40,05,102	8,87,271	1,86,534	—7,00,737	4,49,52,373	Secretary's No. 01176, dated 9th October 1919 .. 26,012
Less Receipts on Capital Account.	3,56,957	9,87,911	13,44,868	..	..	..	13,44,868	Secretary's No. 337 W. I., dated 24th January 1920 .. 16,202
								Secretary's No. 239, dated 24th January 1920 .. 16,264
Net Total ..	1,19,76,383	7,43,851	1,27,20,234	8,87,271	1,86,534	—7,00,737	4,36,07,505	Secretary's No. 335 W. I., dated 24th January 1920 .. 18,167
								Secretary's No. 333 W. I., dated 24th January 1920 .. 26,005
								Secretary's No. 331 W. I., dated 24th January 1920 .. 12,839
INDIRECT CHARGES								Secretary's No. 507 W. I., dated 31st January 1920 .. 10,634
Capitalized abatement of Land Revenue.	1,82,300	25,125	2,07,425	..	..	..	2,07,425	Secretary's No. 1051, dated 13th March 1920 .. 1,231
Leave and Pension Allowances.	6,76,063	48,025	7,04,088	..	..	..	7,04,088	Total .. 1,86,534
Total ..	8,38,363	73,150	9,11,513	..	..	..	9,11,513	
GRAND TOTAL ..	28,14,741	8,17,001	4,36,31,747	8,87,271	1,86,534	—7,00,737	4,45,19,016	

IRRIGATION BRANCH.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Shahpur Canal Project—Imperial.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.			Cost of construction as now estimated (Construction estimate closed on 31st March 1894).	Expenditure against closed Estimate.
	Imperial.				
	Previous.	1919-20.	Total		
	Rs.	Rs.	Rs.	Rs.	Rs.
I.—WORKS.					
2.—MAIN CANAL AND BRANCHES—					
B.—Land	3,028	..	3,028		
D.—Regulator	13,187	..	13,187		
G.—Bridges	20,522	..	20,522		
K.—Buildings	6,006	..	6,006		
L.—Earthwork	80,974	..	80,974		
Total	1,32,717	..	1,32,717		
3.—DISTRIBUTARIES—					
B.—Land	8,219	..	8,219		
C.—Works	18,561	..	18,561		
L.—Earthwork	21,569	..	21,569		
Total	48,349	..	48,349		
TOTAL I.—WORKS	1,81,066	..	1,81,066	1,81,066	1,81,066
II.—ESTABLISHMENT.					
5.—DIRECTION	32,758	..	32,758	32,758	32,758
6.—EXECUTIVE					
Total	32,758	..	32,758	32,758	32,758
III.—TOOLS AND PLANT,					
12.—MISCELLANEOUS	866	..	866	866	866
13.—REPAIRS AND CARRIAGE					
Total	866	..	866	866	866
GRAND TOTAL	2,14,690	..	2,14,690	2,14,690	2,14,690
APPORTIONMENT.					
49.—IRRIGATION WORKS	2,14,690	..	2,14,690	2,14,690	2,14,690

NOTE.—Capital and Revenue Accounts of these canals will continue to be prepared separately as the Shahpur Branch of the Lower Jhelum Canal has been abandoned, vide Secretary of State's Despatch No. P. W. 8, dated 5th February 1920.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Shahpur Canal Project--Imperial.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919 20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates	24,33,514	67,134	25,00,648	1.—EXTENSIONS AND IMPROVEMENTS.			
Sales of water	1,315	...	1,315	2. MAIN CANAL AND BRANCHES	82,254	...	82,254
				3. DISTRIBUTARIES ..	14,623	...	14,623
				4 DRAINAGE AND PROTECTIVE WORKS.	...	1,648	1,648
				TOTAL (1) ..	96,877	1,648	98,525
Receipts from Plantation ..	16,601	...	16,601	2.—MAINTENANCE AND REPAIRS.			
				2. MAIN CANAL AND BRANCHES	6,60,060	18,389	6,85,068
Receipts from other Canal Produce.	3,856	...	3,856	3. DISTRIBUTARIES ..	1,37,862	8,907	1,46,769
				TOTAL 2 ..	8,04,521	27,296	8,31,817
Rent of Buildings ..	1,388	...	1,388	3.—COMPENSATION ..	553	...	553
				4.—ESTABLISHMENT ..			
Fines	1,866	...	1,866	5. DIRECTION AND ACCOUNT..	(b) 6,34,083	41,515	(b) 6,76,498
				6. EXECUTIVE ESTABLISHMENT			
				7. MEDICAL DO. ..			
				7A. REVENUE DO. ..			
				7B. NAVIGATION DO. ..			
				TOTAL ..	6,34,083	41,515	6,76,498
Miscellaneous and other Receipts	1,719	...	1,719	5.—TOOLS AND PLANT.			
				12. MISCELLANEOUS ..	6,212	913	7,125
				13. REPAIRS AND CARRIAGE ..			
Total ..	24,60,250	67,134	25,27,383	TOTAL ..	6,212	913	7,125
				6.—REFUNDS OF REVENUE	1,233	...	1,233
				TOTAL ..	15,44,379	71,372	16,15,751
Share of Land Revenue collected in the Civil Department.	4,38,010	18,938	4,56,948	Indirect Charges debitable to Revenue Account as per Account No. 5.	90,300	5,812	96,112
Total ..	4,38,010	18,938	4,56,948	TOTAL CHARGES ..	16,34,748	77,184	17,11,932
				Balance, net Revenue ..	12,63,521	8,888	12,72,409
TOTAL RECEIPTS ..	28,98,269	86,072	29,84,341	GRAND TOTAL ..	28,98,269	86,072	29,84,341

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Shahpur Canal Project—Imperial.

No. 5—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
CAPITAL—			
Capitalisation of abatement of Land revenue	5,638	...	5,638
Leave and Pension Allowances	4,693	...	4,693
Total ..	10,331	...	10,331
REVENUE—			
Capitalisation of abatement of Land Revenue	944	...	944
Leave and Pension Allowances	89,425	5,812	95,237
Total ..	90,369	5,812	96,181
GRAND TOTAL ..	1,00,700	5,512	1,06,512

No.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS.				REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of Sanctioned Estimate.	Unspent Balance of Estimate.	Total charges to date against old and current sanctions.	
DIRECT CHARGES.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Works	1,75,000	6,006	1,81,066	...	...	...	1,81,066	
Establishment	30,260	2,498	32,758	...	...	...	32,758	
Tools and Plant	613	253	860	...	...	...	860	
Total ..	2,05,933	8,757	2,14,690	...	...	...	2,14,690	
Less Receipts on Capital Account ..	...	...	...	...	...	...	...
Net Total ..	2,05,933	8,758	2,14,690	...	...	...	2,14,690	
INDIRECT CHARGES—								
Capitalized abatement of Land Revenue ..	5,638	...	5,638	...	...	...	5,638	
Leave and Pension Allowances ..	4,343	350	4,693	...	...	...	4,693	
Total ..	9,981	350	10,331	...	...	...	10,331	
GRAND TOTAL ..	2,16,914	9,107	2,25,021	...	...	...	2,25,021	

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ghaggar Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT	DIRECT CHARGES.								
	Imperial.			Contribution.			Total.		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—WORKS.									
1.—HEAD WORKS—									
B.—Land..	432	..	432	288	..	288	720	..	720
C.—Works	59,817	..	59,817	30,878	..	30,878	89,695	..	89,695
K.—Buildings	2,186	..	2,186	1,458	..	1,458	3,644	..	3,644
Total	62,435	..	62,435	41,624	..	41,624	1,04,059	..	1,04,059
2.—MAIN CANAL AND BRANCHES—									
A.—Preliminary Expenses	7,569	..	7,569	5,046	..	5,046	12,615	..	12,615
B.—Land..	8,750	..	8,750	8,294	..	8,294	17,044	..	17,044
D.—Regulators	19,682	..	19,682	8,434	..	8,434	28,116	..	28,116
E.—Falls and Weirs	1,861	..	1,861	5,049	..	5,049	6,910	..	6,910
G.—Bridges	24,076	..	24,076	27,699	..	27,699	51,775	..	51,775
H.—Escapes	13,168	..	13,168	5,651	..	5,651	18,839	..	18,839
K.—Buildings	8,214	—208	8,009	15,971	324	16,295	21,185	110	24,304
L.—Earthwork	77,205	..	77,205	1,10,109	..	1,10,109	1,87,314	..	1,87,314
O.—Miscellaneous	1,527	..	1,527	2,538	..	2,538	4,425	..	4,425
Total	1,62,382	—208	1,62,177	1,98,841	324	1,99,165	3,01,223	110	3,51,342
3.—DISTRIBUTARIES—									
A.—Preliminary Expenses	403	..	403	..	..	..	403	..	403
B.—Land..	3,933	..	3,933	..	..	..	3,933	..	3,933
C.—Works	17,995	..	17,995	..	..	..	17,995	..	17,995
L.—Earthwork	29,210	..	29,210	..	..	..	29,210	..	29,210
O.—Miscellaneous	14,783	..	14,783	8,745	..	8,745	23,028	..	23,813
TOTAL	66,324	..	66,324	8,745	..	8,745	75,069	..	75,069

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL,
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ghaggar Canal Project.

No. 2.—CAPITAL ACCOUNT FOR AND TO END OF 1919-20.

HEADS OF ACCOUNT.	DIRECT CHARGES.									Cost of construction as now estimated (Construction Estimate closed on 31st March 1900).	Expenditure against closed Estimates.
	Imperial.			Contribution.			Total.				
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—DRAINAGE AND PROTECTIVE WORKS—											
L.—Earthwork	5,801	..	5,801	..	..	..	5,801	..	5,801	..	..
TOTAL	5,801	..	5,801	..	..	..	5,801	..	5,801	..	..
TOTAL I.—WORKS ..	2,06,042	—205	2,06,737	2,30,210	324	2,29,534	5,36,152	110	5,36,271	5,36,271	5,36,271
II.—ESTABLISHMENT.											
5—DIRECTION AND ACCOUNT..	..										
6—EXECUTIVE	63,508	—269	63,239	38,076	102	38,078	1,02,484	—167	1,02,317	..	..
7.—MEDICAL .. ..	..									
LEAVE AND PENSION ALLOWANCES	..	..	..	5,457	14	5,471	5,457	14	5,471	..	..
TOTAL	63,508	—269	63,239	44,433	116	44,519	1,07,941	—153	1,07,788	1,07,788	1,07,788
III.—TOOLS AND PLANT.											
12.—MISCELLANEOUS	7,957	—9	7,948	2,543	5	2,548	10,500	—4	10,496	..	..
TOTAL	7,957	—9	7,948	2,543	5	2,548	10,500	—4	10,496	10,496	10,496
GRAND TOTAL	3,68,407	—483	3,67,924	2,86,186	445	2,86,631	6,54,593	—38	6,54,555	6,54,555	6,54,555
V.—LESS RECEIPTS ON CAPITAL ACCOUNT.											
NET TOTAL	3,68,407	—483	3,67,924	2,86,186	445	2,86,631	6,54,592	—38	6,54,555	6,54,555	6,54,555
APPORTIONMENT.											
43.—M. W. AND NAVIGATION, IMPERIAL..	3,68,407	—483	3,67,924	2,86,186	445	2,86,631	6,54,592	—38	6,54,555	6,54,555	6,54,555

(a) Share of Accounts Establishment excluded for the years 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ghaggar Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CONTRIBUTION			TOTAL.		
	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Occupier's rates ...	1,74,168	6,505	1,80,673	..	..	..	1,74,168	6,505	1,80,673
Receipts from Plantation ...	2	..	2	2	..	2	4	..	4
Receipts from other Canal produce ..	..	..	..	1	..	1	1	..	1
Rent of Buildings ..	232	..	232	148	..	148	380	..	380
Fines ..	260	..	260	70	..	70	330	..	330
Miscellaneous and other Receipts ..	181	10	203	120	..	120	301	10	323
Total ...	1,74,816	6,524	1,81,370	341	..	341	1,75,187	6,524	1,81,711
TOTAL RECEIPTS ..	1,74,816	6,524	1,81,370	341	..	341	1,75,187	6,524	1,81,711

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.
Ghaggar Canal Project.

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

Charges.	IMPERIAL.			CONTRIBUTION.			TOTAL.		
	Previous.	1919-20.	Total	Previous.	1919-20.	Total.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1.—EXTENSIONS AND IMPROVEMENTS.									
1. HEAD WORKS	10,006	3,180	13,186	5,627	2,126	7,753	15,633	5,315	20,948
2. MAIN CANAL AND BRANCHES ..	10,096	1,797	17,893	4,023	440	4,472	20,110	2,246	22,356
3. DISTRIBUTARIES	4,546	..	4,546	..	..	..	4,546	..	4,546
4. DRAINAGE AND PROTECTIVE WORKS.	801	..	801	..	..	..	801	..	801
TOTAL ..	31,449	4,986	36,435	9,650	2,576	12,226	41,099	7,561	48,660
2.—MAINTENANCE AND REPAIRS.									
1. HEAD WORKS	32,815	1,341	34,156	21,576	801	22,770	54,691	2,235	56,926
2. MAIN CANAL AND BRANCHES ..	1,12,386	3,561	1,15,950	68,681	801	64,472	1,75,907	4,455	1,80,421
3. DISTRIBUTARIES	30,051	1,493	31,544	160	..	160	30,220	1,493	31,713
4. DRAINAGE AND PROTECTIVE WORKS.	832	..	832	..	..	..	832	..	832
TOTAL 2 ..	1,76,084	6,395	1,82,479	85,617	1,781	87,411	2,01,710	8,183	2,09,893
3.—COMPENSATION ..	10,908	..	10,908	..	..	..	10,908	..	10,908
4.—ESTABLISHMENT.									
5. GENERAL ESTABLISHMENT INCLUDING DIRECTION AND ACCOUNT (b.)	63,088	14,313 } —5,855 } 6,247 } 5,855 }	2,85,555	4,946	1,322	23,673	68,031	15,665	3,09,228
6. EXECUTIVE ESTABLISHMENT ..	2,01,822			17,405			2,19,227		
7. MEDICAL Do. ..	6,302			..			6,302		
7 A. REVENUE Do. ..	1,10,050			..			1,10,650		
7 D. LEAVE AND PENSION ALLOWANCES.	..	a	..	3,127	185	3,312	3,127	185	3,312
TOTAL ..	3,31,571	20,590	4,02,461	25,478	1,507	27,985	4,07,319	22,097	4,29,416
5.—TOOLS AND PLANT.									
12. MISCELLANEOUS	2,800	485	3,315	1,842	66	1,908	4,702	551	5,253
13. REPAIRS AND CARRIAGE ..	..	..	..	..	..	..	..	..	..
TOTAL ..	2,800	485	3,315	1,842	66	1,908	4,702	551	5,253
6.—REFUNDS OF REVENUE ..	2,432	..	2,432	20	..	20	2,452	..	2,452
TOTAL ..	6,05,604	32,459	6,38,063	1,21,618	8,073	1,29,691	7,68,220	38,392	7,66,612
Indirect charges debitable to Revenue Account as per Account No. 5.	53,461	2,882	56,343	..	..	..	53,461	2,882	56,343
TOTAL CHARGES ..	6,59,065	35,341	6,94,406	1,22,618	8,073	1,30,691	7,81,681	41,274	8,22,955
BALANCE NET REVENUE,, ..	-4,84,219	-28,817	-5,13,036	-1,22,276	-5,853	-1,28,208	-6,06,401	-34,750	-6,41,241
GRAND TOTAL ..	1,74,846	6,524	1,81,370	341	..	341	1,75,187	6,524	1,81,711

(a) Represents extra share on account of doubling up of outlay under 43 Revenue : 1918-19 = 2,609
1919-20 = 3,246
5,855

(b) Share of Accounts Establishment excluded from 1915-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF THE ACCOUNTANT-GENERAL,
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ghaggar Canal Project.

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.						Previous.	1919-20.	Total.
						Rs.	Rs.	Rs.
CAPITAL—								
Capitalization of abatement of Land Revenue	...	..	..	..	..	2,000	...	2,000
Leave and Pension Allowances	Imperial	..	..	..	..	8,890	—37	8,853
	Contribution	..	..	..	..	5,457	—14	5,471
Total						16,347	—23	16,324
<i>Deduct.—Leave and Pension Allowances debitable to Bikaner State treated as direct charge and transferred to Account No. 2 of the canal.</i>						5,457	+14	5,471
Net debitable to Imperial						10,890	—37	10,853
REVENUE—								
Capitalization of abatement of Land Revenue..	..	..	..	..	..	..	..	..
Leave and Pension Allowances	Imperial	..	..	..	..	53,461	2,582	56,343
	Contribution	..	..	..	..	3,127	185	3,312
Total						56,588	3,067	59,655
<i>Deduct.—Leave and Pension Allowances debitable to Bikaner State treated as direct charges and transferred to Account No. 3 of the canal.</i>						3,127	185	3,312
Total						53,461	2,882	56,343

No. 6.—STATEMENT COMPARING CHARGES TO DATE WITH SANCTIONED ESTIMATE.

PARTICULARS.	CHARGES AGAINST CLOSED SANCTIONS.			CURRENT SANCTIONS			Total charges to date against old and current sanctions.	REMARKS.
	Expenditure against Construction Estimate.	Expenditure against open canal sanctions.	Total.	Charges to date.	Amount of sanctioned Estimate.	Unspent Balance of Estimate.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
DIRECT CHARGES—								
Works	4,98,214	38,057	5,36,271	...	...	...	5,36,271	
Establishment	1,09,270	6,818	1,07,788	...	...	...	1,07,788	
Tools and Plant	10,045	445	10,496	...	...	...	10,496	
Total	6,09,232	45,320	6,54,552	..	..	..	6,54,552	
LESS Receipts on Capital Account	..	..	..	..	..	..	..
Net Total	6,09,232	45,320	6,54,552	..	..	..	6,54,552	
INDIRECT CHARGES—								
Capitalized of abatement of Land Revenue	1,900	100	2,000	..	...	..	2,000	
Leave and Pension Allowances	7,968	885	8,853	...	..	...	8,853	
Total	9,868	985	10,853	..	..	..	10,853	
GRAND TOTAL	6,19,100	46,305	6,65,405	..	..	..	6,65,405	

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Sutlej Inundation Canal including Hajiwah Canal Project

No. 3.—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ..	42,13,913	2,33,731	44,47,644	1.—EXTENSIONS AND IMPROVEMENTS.			
				2.—MAIN CANAL & BRANCHES ..	10,02,511	1,51,285	11,53,796
				3.—DISTRIBUTARIES ..	1,60,005	5,198	1,65,203
				4.—DRAINAGE AND PROTECTIVE WORKS.	5,688	..	5,688
Sales of water ...	3,529	171	3,700	TOTAL 1 ..	11,68,264	1,56,483	13,24,737
				2.—MAINTENANCE AND REPAIRS.			
Receipts from Plantations .	72,277	2,279	74,556	2.—MAIN CANAL & BRANCHES ..	29,38,301	89,001	30,28,202
				3.—DISTRIBUTARIES ..	1,88,554	12,543	2,01,203
Receipts from other Canal produce.	34,434	197	34,631	4.—DRAINAGE WORKS ..	3,040	236	3,276
				TOTAL 2 ..	31,30,195	1,02,780	32,32,975
				3.—COMPENSATION ..	4,191	..	4,191
Rent of Buildings ..				4.—ESTABLISHMENT			
				5.—DIRECTION AND ACCOUNT (a)	22,37,775	13,388	22,51,163
				6.—EXECUTIVE ESTABLISHMENT..			
				7.—MEDICAL Do ..	5,21,962	1,47,109	6,69,071
				7 A.—REVENUE Do ..			
				TOTAL ..	27,59,737	1,60,497	29,20,234
Fines ..	58,482	1,074	60,156	5.—TOOLS AND PLANT.			
				1.—SCIENTIFIC INSTRUMENTS AND DRAWING MATERIALS.			
Miscellaneous and other Receipts				2.—PLANT AND MACHINERY ..			
				3.—TOOLS ..			
				4.—NAVIGATION PLANT ..			
				5.—CAMP EQUIPAGE..	49,022	1,005	50,027
				6.—LIVE STOCK ..			
				7.—OFFICE FURNITURE ..			
				8.—REPAIR AND CARRIAGE ..			
				MISCELLANEOUS ..			
TOTAL ..	43,52,035	2,38,032	46,20,687	TOTAL ..	49,022	1,005	50,027
				6.—REFUNDS OF REVENUE PROFIT AND LOSS ...	4,005	..	4,005
					348	..	348
				SUBTENSE ACCOUNT.			
Contribution..	12,45,839	..	12,45,839	Miscellaneous Advances ..	20	28	48
				Stock ..	33,921	—7,292	26,629
				Stock purchases ..	—2,557	2,558	1
				Stock sales ..	4	..	4
				TOTAL ..	31,388	—4,706	26,682
Chher Labour ..	39,24,410	..	39,24,410	Chher Labour ..	39,24,410	..	39,24,410
				TOTAL ..	1,10,71,953	4,16,055	1,14,88,008
Share of Land Revenue collected in the Civil Department.	1,00,60,880	2,28,240	1,02,87,120	Indirect charges debitable to Revenue Account as per Account No. 5.	4,19,464	22,470	4,41,934
				TOTAL CHARGES ..	1,14,91,417	4,38,525	1,19,29,942
TOTAL RECEIPTS ..	1,96,13,764	4,64,292	2,00,78,056	Balance, Net Revenue ..	81,22,347	25,707	81,48,114
				GRAND TOTAL ..	1,96,13,764	4,64,292	2,00,78,056

(a) Share of Accounts Establishment excluded from 1912-13 to 1917-18.

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IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Sutlej Inundation Canals including Hajiwah Canal Project.

No. 5 —ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Capitalization abatement of Land Revenue ..	8	..	5
Leave and Pension Allowances	4,10,489	22,470	4,41,929
Total ..	4,10,494	22,470	4,41,924

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.
Lower Sutlej Inundation Canals (Hajiwah Canal Project.)
No. 3.—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ..	5,65,624	18,489	5,84,113	1 EXTENSIONS AND IMPROVEMENTS.			
				2.—MAIN CANAL & BRANCHES	33,425	..	33,425
				3.—DISTRIBUTARIES ..	15	..	15
				TOTAL (1) ..	33,440	..	33,440
Sales of water ..	11	..	11	2.—MAINTENANCE AND REPAIRS.			
				2.—MAIN CANAL & BRANCHES	2,71,105	12,004	2,83,289
				3.—DISTRIBUTARIES ..	12	..	12
Receipts from Plantations ..	157	..	157	TOTAL 2 ..	2,71,207	12,004	2,83,301
				3—COMPENSATION.			
Receipts from other Canal Produce.	35	..	35	4—ESTABLISHMENT (a) ..			
				5.—DIRECTION AND ACCOUNT...			
				6.—EXECUTIVE ESTABLISHMENT	1,51,161	7,487	1,58,648
Miscellaneous and other Receipts.	90	..	90	7 A.—REVENUE Do.			
				TOTAL ..	1,51,161	7,487	1,58,648
				8—TOOLS & PLANT.			
				9.—NAVIGATION PLANT ..			
				12—MISCELLANEOUS ..	2,761	47	2,808
				13.—REPAIRS AND CARRIAGE ..			
Total ..	5,65,917	18,489	5,84,406	TOTAL ..	2,761	47	2,808
				6.—REFUNDS OF REVENUE	620	..	620
				7.—PROFIT AND LOSS ..	..	..	..
				TOTAL ..	4,59,189	19,628	4,78,817
Share of Land Revenue collected in the Civil Department.	5,67,322	29,593	5,96,915	Indirect Charges debitable to Revenue Account as per Account No. 5.	21,162	1,048	22,210
				TOTAL CHARGES ..	4,80,351	20,676	5,01,027
				Balance, Net Revenue ..	6,52,888	27,406	6,80,294
TOTAL RECEIPTS ..	11,33,239	48,082	11,81,321	GRAND TOTAL ..	11,33,239	48,082	11,81,321

(a) Share of Accounts Establishment excluded from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Lower Sutlej Inundation Canals and Hajiwah Canal Project.

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Leave and Pension Allowances	21,102	1,018	22,210
Total ..	21,102	1,018	22,210

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Chenab Inundation Canals Project.

No. 3—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates	32,40,842	1,50,535	34,06,377	1.—EXTENSIONS AND IMPROVEMENTS			
Sales of water	4,356	270	4,626	2. MAIN CANAL AND BRANCHES	9,13,131	2,008	9,15,139
Receipts from plantation ..	1,21,852	11,009	1,32,861	3. DISTRIBUTARIES ..	1,60,381	585	1,60,966
Receipts from other Canal produce	42,514	1,349	43,863	4.—DRAINAGE AND PROTECTIVE WORKS.	28,250	...	28,250
Rent of Buildings ..	2,851	253	2,604	TOTAL ..	11,01,762	2,593	11,04,355
Fines	41,577	497	42,074	2.—MAINTENANCE AND REPAIRS.			
Miscellaneous and other Receipts	4,557	1,067	5,624	2. MAIN CANAL AND BRANCHES	33,71,742	64,148	31,35,890
Total ..	34,67,049	1,70,986	36,38,035	3. DISTRIBUTARIES ..	1,55,000	12,793	1,68,756
Contribution	11,47,506	...	11,47,506	4. DRAINAGE WORKS ..	98,001	973	98,777
Other Labour	24,08,114	...	24,08,114	TOTAL ..	36,25,706	77,917	37,03,623
				3.—COMPENSATION ..	2,002	...	2,002
				4.—GENERAL ESTABLISHMENT INCLUDING.			
				5. DIRECTION AND ACCOUNT ..	(a) 5,79,593	—3,009	5,75,594
				6. EXECUTIVE ESTABLISHMENT			
				7. MEDICAL Do. ..	17,40,829	68,373	18,29,202
				7A. REVENUE Do. ..			
				TOTAL ..	23,20,422	84,374	24,04,796
				5. TOOLS & PLANT.	900	312	1,212
				12. MISCELLANEOUS ..	31,988	...	31,988
				13. REPAIRS AND CARRIAGE ..			
				TOTAL ..	32,888	312	33,200
				6.—REFUNDS OF REVENUE	9,943	310	10,253
				7.—PROFIT AND LOSS ..	425	...	425
				TOTAL ..	70,93,148	1,05,505	72,58,654
				OTHER LABOUR	24,08,114	...	24,08,114
				TOTAL ..	95,01,262	1,05,505	96,06,768
				Indirect Charges debitab to Revenue Account as per Account No. 5.	3,74,689	11,812	3,86,501
				TOTAL CHARGES ..	98,75,951	1,77,318	1,00,53,269
				Balance, Net Revenue ..	75,96,931	1,89,349	77,86,280
				GRAND TOTAL ..	1,74,72,882	3,66,667	1,78,39,549
Share of land revenue collected in Civil Department.	1,04,50,213	1,95,681	1,06,45,894				
GRAND TOTAL ..	1,74,72,882	3,66,667	1,78,39,549				

(a). Share of accounts establishment excluded from 1912-13 to 1917-18.

IRRIGATION BRANCH.

PUNJAB PROVINCE,

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Chenab Inundation Canals Project.

No 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars,	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Capitalization abatement of Land Revenue	8,536	..	8,536
Leave and Pension Allowances	3,06,163	11,812	3,77,965
Total ...	3,74,689	11,812	3,86,501

OFFICE OF ACCOUNTANT-GENERAL.
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Muzaffargarh Inundation Canals Project.

No. 3—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

RECEIPTS.	IMPERIAL.			CHARGES.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates ...	40,12,433	2,86,016	42,98,449	1.—EXTENSIONS AND IMPROVEMENTS.			
				2. MAIN CANAL AND BRANCHES	7,52,320	15,813	7,68,133
				3. DISTRIBUTARIES ..	1,62,692	2,552	1,65,244
Sales of water ..	2,361	341	2,702	4. DRAINAGE AND PROTECTIVE WORKS.	20,338	..	20,338
				TOTAL I ...	9,35,350	18,665	9,54,015
Receipts from Plantations ..	1,50,143	4,952	1,55,095	2.—MAINTENANCE AND REPAIRS.			
				2. MAIN CANAL AND BRANCHES	32,53,225	1,47,384	34,00,609
				3. DISTRIBUTARIES ..	3,80,886	41,962	4,22,848
Receipts from other Canal produce.	8,105	458	8,563	4. DRAINAGE WORKS ..	40,048	..	40,048
				TOTAL 2 ..	36,74,159	1,89,346	38,63,505
Fines ..	22,881	546	23,427	3.—COMPENSATION ..	7,632	..	7,632
				5. GENERAL ESTABLISHMENT INCLUDING DIRECTION AND ACCOUNT (a).	22,82,791	2,047	22,84,838
Miscellaneous and other Receipts.	13,208	727	13,935	6. EXECUTIVE ESTABLISHMENT...			
				7A. REVENUE Do ...	7,79,217	1,13,667	8,92,884
				TOTAL ..	30,62,008	1,15,714	31,77,722
				5.—TOOLS AND PLANT ..	..	
				1. SCIENTIFIC INSTRUMENTS			
				2. PLANT AND MACHINERY ..			
				3. TOOLS ..			
				4. NAVIGATION ..			
				5. CAMP EQUIPAGE ..			
				6. LIVE STOCK ..			
				7. OFFICE FURNITURE ..			
				8. REPAIRS AND CARRIAGE ..			
				12. MISCELLANEOUS ..			
				TOTAL TOOLS AND PLANT ..	63,747	806	64,553
Contribution ..	8,01,279	..	8,01,279	6.—REFUNDS OF REVENUE..	1,460	197	1,657
				7.—PROFIT AND LOSS ..	4	..	4
Chher Labour ..	24,34,233	..	24,34,233	8. SUSPENSE ACCOUNT ..	..	4	4
				Miscellaneous Advances ..	..	..	..
				Stock ..	35,075	—2,114	32,961
				Stock sales ..	..	—77	—77
				Stock purchases ..	..	..	..
				London stores ..	—14	..	—14
				TOTAL ..	35,061	—2,187	32,874
				Chher Labour ..	24,34,233	..	24,34,233
				TOTAL ..	1,02,13,854	3,22,541	1,05,36,195
Share of land Revenue collected in the Civil Department.	1,18,08,082	3,93,834	1,22,01,916	Indirect Charges debitable to Revenue Account as per Account No. 5.	4,48,565	17,200	4,65,765
				Total charges ..	1,06,62,210	3,39,741	1,10,01,960
				Balance, Net Revenue ..	85,90,506	3,47,133	89,37,639
TOTAL RECEIPTS ..	1,92,52,725	6,86,874	1,99,39,599	GRAND TOTAL ..	1,92,52,725	6,86,874	1,99,39,599

(a). Share of Accounts Establishment excluded from 1912-13 to 1917-18.

OFFICE OF ACCOUNTANT GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Muzaffargarh Inundation Canals Project.

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Capitalization abatement of Land Revenue	18,655	1,000	19,655
Leave and Pension Allowances	4,29,910	16,200	4,46,110
Total ..	4,48,565	17,200	4,65,765

OFFICE OF ACCOUNTANT-GENERAL,
ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Shahpur Canal Project—Provincial.

No. 3.—REVENUE ACCOUNTS FOR AND TO END OF 1919-20.

Receipts.	PROVINCIAL.			Charges.	PROVINCIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates	9,58,354	35,681	9,94,035	1. EXTENSIONS AND IMPROVEMENTS.			
				2.—MAIN CANAL AND BRANCHES ..	33,583	5,333	38,916
				3.—DISTRIBUTARIES	11,487	...	11,487
				TOTAL 1 ..	45,070	5,333	50,403
Sales of water	8,023	...	8,023	2 MAINTENANCE AND REPAIRS.			
				2.—MAIN CANAL AND BRANCHES ..	2,86,725	10,482	2,97,207
				3.—DISTRIBUTARIES	75,130	3,288	78,418
Receipts from Plantations ..	5,108	..	5,108	TOTAL 2 ..	3,61,855	13,770	3,75,625
				3. COMPENSATION	62	...	62
Receipts from other Canal Produce,	490	...	490	4. ESTABLISHMENT.			
				5.—DIRECTION AND ACCOUNT ..	4,44,008	27,732	(b) 4,71,740
				6.—EXECUTIVE ESTABLISHMENT ..			
				7.—MEDICAL ESTABLISHMENT ..			
				7 A.—REVENUE ESTABLISHMENT ..			
Water power	926	...	926	TOTAL ..	4,44,008	27,732	4,71,740
				5 TOOLS AND PLANT.			
Fines	713	...	713	12.—MISCELLANEOUS	3,801	610	4,411
				13.—REPAIRS AND CARRIAGE ..			
				TOTAL ..	3,801	610	4,411
Miscellaneous and other Receipts	3,693	...	3,693	7.—PROFIT AND LOSS ..	616	...	616
				TOTAL ..	8,55,412	47,445	9,02,857
Total	9,77,307	35,681	10,12,988	Indirect Charges debitable to Revenue Account as per Account No. 5.	63,853	3,882	67,735
				TOTAL CHARGES ..	9,19,265	51,327	9,70,592
Share of Land Revenue collected in the Civil Department.	2,20,239	9,935	2,30,174	Balance, Net Revenue ..	2,78,281	—5,711	2,72,570
TOTAL RECEIPTS	11,97,546	45,616	12,43,162	GRAND TOTAL ..	11,97,546	45,616	12,43,162

(b) Share of Accounts Establishment excluded from 1912-13 to 1917-18 and from 1919-20.

IRRIGATION BRANCH.

PUNJAB PROVINCE.

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

. Shahpur Canal Project—Provincial.

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Capitalization of abatement of Land Revenue	1,693	...	1,693
Leave and Pension Allowances	62,160	3,882	66,042
Total	63,853	3,882	67,735

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ravi Inundation Canals Project.

No. 3—REVENUE ACCOUNT FOR AND TO END OF 1919-20.

Receipts.	IMPERIAL.			Charges.	IMPERIAL.		
	Previous.	1919-20.	Total.		Previous.	1919-20.	Total.
	Rs.	R.	Rs.		Rs.	Rs.	Rs.
Occupiers' rates	1,05,273	...	1,05,273	1 EXTENSIONS AND IMPROVEMENTS.			
				2—MAIN CANAL AND BRANCHES ..	500	...	500
				TOTAL ..	500	...	500
				2 MAINTENANCE AND REPAIRS.			
				2.—MAIN CANAL AND BRANCHES ..	89,597	...	89,597
Sales of water	297	...	297	3.—DISTRIBUTARIES ..	9,522	...	9,522
				TOTAL ..	99,119	...	99,119
				3. COMPENSATION	34	...	34
				4. ESTABLISHMENT.			
				5.—DIRECTION AND ACCOUNT ..	23,693	...	23,693
Fines	36	...	36	6.—EXECUTIVE ESTABLISHMENT ..	1,15,053	...	1,15,053
				7.—MEDICAL ESTABLISHMENT ..			
				7 A.—REVENUE ESTABLISHMENT ..			
				TOTAL ..	1,38,746	...	1,38,746
				5. TOOLS AND PLANT.			
				12.—MISCELLANEOUS ..	1,722	...	1,722
Miscellaneous and other Receipts ..	8	...	8	13.—REPAIRS AND CARRIAGE ..	915	...	915
				TOTAL ..	2,637	...	2,637
Total ..	1,05,614	...	1,05,614	8. REFUNDS OF REVENUE ..	1,006	...	1,006
				TOTAL ..	2,42,042	...	2,42,042
Revenue of Land Revenue collected by the Civil Department.	1,27,809	...	1,27,809	Indirect Charges debitable to Revenue Account as per Account No. 8.	19,424	...	19,424
				TOTAL CHARGES ..	2,61,466	...	2,61,466
				Balance, Net Revenue	—28,043	...	—28,043
TOTAL RECEIPTS ..	2,33,423	...	2,33,423	GRAND TOTAL ..	2,33,423	...	2,33,423

OFFICE OF ACCOUNTANT-GENERAL.

ADMINISTRATIVE ACCOUNTS FOR THE YEAR 1919-20.

Ravi Inundation Canals Project

No. 5.—ACCOUNT OF INDIRECT CHARGES FOR AND TO END OF 1919-20.

Particulars.	Previous.	1919-20.	Total.
	Rs.	Rs.	Rs.
REVENUE—			
Leave and Pension Allowances	19,424	..	19,424
Total ..	19,424	..	19,424